STATISTICAL METHODS FOR EVALUATION AND QUALITY:
TECHNIQUES, TECHNOLOGIES AND TRENDS (T³)

PESCARA, AUGUST 30 – SEPTEMBER 1, 2023
UNIVERSITY "G. d'ANNUNZIO" CHIETI-PESCARA

IES 2023 CONFERENCE
STATISTICAL METHODS FOR EVALUATION AND QUALITY:
TECHNIQUES, TECHNOLOGIES AND TRENDS (T³)

SCIENTIFIC PROGRAM

UNIVERSITY "G. d'ANNUNZIO" CHIETI-PESCARA
AUGUST 30 – SEPTEMBER 1, 2023
Viale Pindaro 42, Pescara (Italy)

SCAN OR CLICK ME!

DISFIPEQ

Sezione di Economia
e Metodi Quantitativi
Campus di Pescara

STATISTICAL METHODS
FOR EVALUATION AND QUALITY:
TECHNIQUES, TECHNOLOGIES AND TRENDS (T³)

University of Chieti–Pescara "G. d'Annunzio"
August 30 - September 1

Dear Colleagues,

On behalf of the Scientific Program Committee and of the Local Organizing Committee, we are delighted to welcome you to the "G. d'Annunzio" University of Chieti-Pescara for the 11th Scientific Meeting of the SIS Group "Statistics for the Evaluation and Quality in Services" (SVQS) entitled IeS 2023 - Statistical Methods for Evaluation and Quality: Techniques, Technologies, and Trends (T^3).
The SVQS took life in 2004 thanks to the collaborative work of some SIS members to address methodological and empirical aspects related to the statistical evaluation of both private and public services.

The Innovation and Society (IeS) conference is a biennial international meeting, which aims to promote scientific discussion on several topics such as Digital Transition, E-commerce and Digital Marketing, Enterprises, Environment and Territory, Healthcare and Wellness, Finance, Bank and FinTech, Justice System, Labour Market, Official Statistics, Public Administration, Food and Wine, School, Education and Training, Social, Sports, Sustainability, Tourism, Transport, University and Research, Wellbeing and Welfare.

The Conference attracted many contributions as well as numerous Italian and international Authors. The Conference consists of 23 Invited sessions, 7 contributed sessions, two round tables organized respectively by Maurizio Vichi and Matilde Bini, and three keynote sessions that host Ron S. Kennet from the Samuel Neaman Institute of Israel, Luigi D'Ambra from the Federico II University of Naples, and the former Minister Enrico Giovannini from University of Tor Vergata.

This event would not have been possible without the efforts of the Scientific Program and Local Organizing Committees members and many volunteers, including the statisticians and PhD students from the Departments of the "G. d'Annunzio" University. We would like to express our utmost gratitude to all of them and to the funders who supported the conference.

Wishing you a successful and engaging conference and a pleasant stay at the "G. d'Annunzio" University, we believe there will be many opportunities for you to meet and discuss your latest findings with other researchers and scholars who share your interests.

Enjoy your IeS2023

Paolo Mariani
Chair of the Program Committee

Tonio Di Battista
Chair of Local Organizing Committee

Maurizio Carpita
Coordinator of the SVQS Group

Scientific Committee of the group of the Italian Statistical Society on Statistics for the Evaluation and Quality in Services – SVQS

Maurizio Carpita (Coordinator)	University of Brescia
Pietro Amenta	University of Sannio
Matilde Bini	European University of Roma
Antonello D'Ambra	University of Campania "L. Vanvitelli"
Luigi D'Ambra	University of Naples "Federico II"
Paolo Mariani	University of Milan "Bicocca"
Marica Manisera	University of Brescia
Monica Palma	University of Salento
Pasquale Sarnacchiaro	University of Naples "Federico II"

Program Committee of the Conference IES 2023

Paolo Mariani (Chair)	University of Milano "Bicocca"
Matilde Bini	European University of Roma
Mario Bolzan	University of Padova
Giuseppe Bove	University of Roma 3
Eugenio Brentari	University of Brescia
Ida Camminatiello	University of Campania "L. Vanvitelli"
Maurizio Carpita	University of Brescia
Carlo Cavicchia	Erasmus University Rotterdam
Roy Cerqueti	University of Rome "La Sapienza"
Enrico Ciavolino	University of Salento
Corrado Crocetta	University of Bari "Aldo Moro"
Antonello D'Ambra	University of Campania "L. Vanvitelli"
Pierpaolo D'Urso	University of Rome "La Sapienza"
Tonio Di Battista	University "G. d'Annunzio" of Chieti-Pescara
Simone Di Zio	University "G. d'Annunzio" of Chieti-Pescara
Mauro Ferrante	University of Palermo
Francesca Fortuna	University of "Roma Tre"
Michele Gallo	University of Naples "Orientale"
Claudiu Herteliu	Bucharest University of Economic Studies
Salvatore Ingrassia	University of Catania
Ron Kenett	Samuel Neaman Institute & KPA Group

Michele La Rocca	University of Salerno
Rosaria Lombardo	University of Campania "L. Vanvitelli"
Antonio Lucadamo	University of Sannio
Marica Manisera	University of Brescia
Andrea Marletta	University of Milano "Bicocca"
Lucio Masserini	University of Pisa
Fabrizio Maturo	University Mercatorum
Matteo Mazziotta	ISTAT (National Institute of Statistics)
Rodolfo Metulini	University of Bergamo
Stefania Mignani	University of Bologna
Enrico Ripamonti	University of Brescia
Silvia Salini	University of Milano
Pasquale Sarnacchiaro	University of Naples "Federico II"
Violetta Simonacci	University of Naples "Federico II"
Maurizio Vichi	University of Rome "La Sapienza"
Mariangela Zenga	University of Milano "Bicocca"

Local Committee of the Conference IES 2023

Tonio Di Battista (Chair)	University "G. d'Annunzio" of Chieti-Pescara
Andrea Bucci	University "G. d'Annunzio" of Chieti-Pescara
Alfredo Cartone	University "G. d'Annunzio" of Chieti-Pescara
Marco Di Marzio	University "G. d'Annunzio" of Chieti-Pescara
Marta Di Nicola	University "G. d'Annunzio" of Chieti-Pescara
Simone Di Zio	University "G. d'Annunzio" of Chieti-Pescara
Stefania Fensore	University "G. d'Annunzio" of Chieti-Pescara
Lara Fontanella	University "G. d'Annunzio" of Chieti-Pescara
Stefano Antonio Gattone	University "G. d'Annunzio" of Chieti-Pescara
Luigi Ippoliti	University "G. d'Annunzio" of Chieti-Pescara
Eugenia Nissi	University "G. d'Annunzio" of Chieti-Pescara
Paolo Postiglione	University "G. d'Annunzio" of Chieti-Pescara
Annalina Sarra	University "G. d'Annunzio" of Chieti-Pescara
Pasquale Valentini	University "G. d'Annunzio" of Chieti-Pescara
Adelia Evangelista (Secretariat)	University "G. d'Annunzio" of Chieti-Pescara

PRACTICAL INFORMATION

The Venue
University "G. d'Annunzio" of Chieti-Pescara
Viale Pindaro 42, 65127 Pescara (PE)

Pescara is an Italian city located in the Abruzzo region, on the Adriatic coast. It is known for its beaches and for being the birthplace of the poet Gabriele D'Annunzio. On the other hand, Chieti is among the most ancient of Italian cities. According to a legend, the city was founded by Achille and was named *Thetis* after his mother.

The territory offers a mix of nature, suggestive landscapes and a variety of out-door activities. The beaches of Abruzzo vary from sandy in the North to pebble in the South. Also, the small villages of the hinterland, as well as the monasteries and castles of the region, are very charming and are part of many touristic routes in the *"greenest region"* of Italy.

For more information about local places and suggestions for tourist itineraries in the surrounding areas, we invite you to look at the following sites:
https://www.comune.pescara.it/
https://www.comune.chieti.it/index
https://abruzzoturismo.it/en/pescara
https://abruzzoturismo.it/en/chieti
https://abruzzoturismo.it/en/itinerari
https://abruzzoturismo.it/it/costa-dei-trabocchi

HOW TO GET TO THE CONFERENCE LOCATION

Nearest international airports:

Abruzzo Airport – Pescara
https://www.abruzzoairport.com/

Roma Ciampino - Giovan Battista Pastine International Airport (CIA) about 202 km
https://www.adr.it/ciampino

Roma Fiumicino - Leonardo da Vinci Airport (FCO) about 228 km
https://www.adr.it/fiumicino

By Train

Trains are a bit slower than buses. When you arrive at the Rome Airport you should take the train to Termini train station. Do not take the train to Tiburtina. Some regional trains operated by Trenitalia connect **Rome** to **Pescara**. The journey (without changes) will take approximately 3h 3m from Roma Termini train station.

By Bus

Several bus lines connect Rome to Pescara. Some options are provided below, organized by departure location. We still strongly suggest you planning your itinerary in advance and check up-to-date timetables and fares.

- Bus lines operated by DICARLOBUS (www.dicarlobus.com)
  From *Roma Fiumicino Airport* to *Pescara bus station*

DEPARTURE	ARRIVE
07:00	10:30 (around 3h 30m)
09:00	12:15 (around 3h 30m)

  From *Roma Tiburtina bus station* to *Pescara bus station*

DEPARTURE	ARRIVE
08:10	10:30 (around 2h 15m)
10:00	12:15 (around 2h 15m)

- **Bus lines operated by PRONTOBUS** (www.prontobusitalia.it)
  From *Roma Fiumicino Airport* to *Pescara bus station*

DEPARTURE	ARRIVE
09:30	13:20 (around 3h 50m)
11:30	14:45 (around 3h 15m)

  From *Roma Tiburtina bus station* to *Pescara bus station*

DEPARTURE	ARRIVE
07:00	10:45 (around 2h 45m)
10:45	13:20 (around 2h 35m)

  From *Roma Ciampino Airport* to *Pescara bus station*

DEPARTURE	ARRIVE
10:00	13:30 (around 3h 20m)
12:00	14:45 (around 2h 45m)

Several **urban bus lines** connect *Pescara terminal bus/city centre* to the *University "G. d'Annunzio" of Chieti-Pescara.*
The bus lines are number **3**, **6**, **7** and **21**.

By Car
From South: Highway A14 - Take the exit towards Pescara South

From North: Highway A14 - Take the exit towards Pescara West - Take Raccordo autostradale Chieti-Pescara (RA12 & E80) - Take the exit towards Pescara University

From West: Highway A25 - Take the exit towards Chieti-Pescara - Take Take Raccordo autostradale Chieti-Pescara (RA12 & E80) - Take the exit towards Pescara University

Taxi
If you need a Taxi you can call Radiotaxi (+39) 08535155.

SESSION

Structure of the Sessions

Keynote Speeches	35' minutes talk, 10' floor discussion	Plenary
Round Tables	45' minutes talk and floor discussion	Plenary
Invited Sessions (SS)	15' minutes talk, 5' floor discussion	Parallel
Contributed Sessions (SCL)	15' minutes talk, 5' floor discussion	Parallel

Plenary Sessions and SVQS Assembly

Keynote Speeches, Round Tables and SVQS Assembly will take place in Room 31 at the ground floor of the Conference venue.

Invited and Contributed Sessions

Invited and Contributed sessions will take place in Rooms 27B, 31, 33, 35 (ground floor) of the Conference venue.

Coffee breaks and lunches

Coffee breaks and lunches will take place in Room 28 (ground floor) of the Conference venue.

KEYNOTE SPEAKERS

Luigi D'Ambra
University of Naples "Federico II"

Ron Kenett
Samuel Neaman Institute & KPA Group

Enrico Giovannini
University of "Tor Vergata" Roma

ROUND TABLES

Governance and methods for Statistical Quality
Organizer: **Maurizio Vichi** (COGIS)

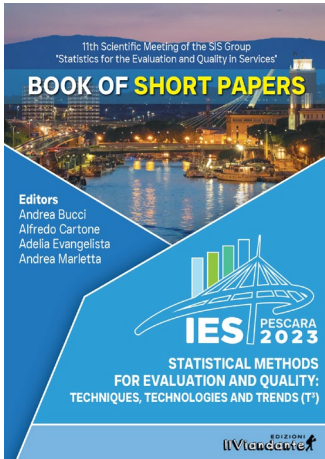**The algorithm: l'arte di domare i dati tra Statistica, Intelligenza Artificiale e Cybersecurity**
Organizer: **Matilde Bini**

OTHER INFORMATION

Internet WI-FI

A free WI-FI connection is available at the Conference venue. You can connect to the **Eduroam** network with your personal credentials.

SPECIAL ISSUES & BOOK OF SHORT PAPERS

SCAN ME! FOR THE BOOK OF SHORT PAPERS

Authors of papers presented at IES2023 are invited to submit the extended version for possible publication in a **special issue** of International Journals.
The Program Committee has planned:

- a special issue in **Socio-Economic and Planning Sciences (SEPS)** journal: "*Statistical methods on heterogeneous data for evaluating services*". **Guest Editors:** Tonio Di Battista, Ron Kenett, Paolo Mariani, Antonello D'Ambra.
- a "*fast track procedure*" in **Statistical Methods and Applications (SMA)** journal. The authors should specify that the paper has been presented at IES 2023 Conference during the submission phase.

SOCIAL EVENTS

Welcome Cocktail : "Rustelle on the Beach"

The Welcome Cocktail (Aperitif) takes place at Saturno Beach Club (Pescara) at 20.30, on Wednesday, August 30th. In addition to drinks, you can taste the famous *Abruzzo's Arrosticini* offered by the Local Committee of the Conference.

For those who wish to continue the evening with a dinner, we inform you that Saturno beach club hosts the Restaurant Margherita a Mare which serves typical Abruzzo cuisine. The estimated cost is 25-30 euros per person. Given the touristic season, you should make the reservation at least 8 days before.

Saturno Beach Club
Viale della Riviera, 16, 65123 Pescara PE

Guided Tour in Chieti and IES2023 Social Dinner

A shuttle service is organised for those who wish to participate to the guided tour in Chieti. After that, the Social Dinner takes place at Lo Scoiattolo Restaurant (Chieti) at 20.30, on Thursday, August 31st.
Price: 50 euros to be paid at the registration desk of the conference.

Lo Scoiattolo Restaurant
Via Colle dell'Ara, 3, 66100 Chieti CH

Dinner among Vineyards Rows

The Dinner among Vineyards Rows (Wine Tasting Experience) takes place at Marchesi de' Cordano wine cellar (Loreto Aprutino) at 20.30, on Friday, September 1st. A shuttle service is organized to accompany guests to the wine cellar.
Price: 25 euros to be paid at the registration desk of the conference.

Marchesi de' Cordano
Contrada Cordano, 43, 65014 Loreto Aprutino PE

Scientific Program
WEDNESDAY, AUGUST 30

12:00	**Ground Floor**	**Registration**-University "G. d'Annunzio " - Viale Pindaro, 42 Pescara
14:30 - 15:00	**Room 31**	**Welcome ceremony**
15:00 – 15:45	**Room 31**	**Keynote Speech** **Befitting Cross Validation with 3 case studies** *Ron Kenett* Chair: *Tonio Di Battista*
15:45 – 16:30	**Room 31**	**Round Table** of the COGIS organized by *Maurizio Vichi* **Governance and methods for Statistical Quality** Chair: *Maurizio Carpita* • **Emanuele Baldacci - EUROSTAT** • **Simona Coccetta - USCI** • **Fabio Crescenzi - ISTAT** • **Maurizio Vichi - COGIS**
16:30 – 17:00	**Room 28**	***Coffee Break***
17:00 – 18:30	**Room 31**	**Invited session: Statistical analysis and modeling of environmental pollution data** Session of the SIS - GRASPA organized by *Pasquale Valentini, Natalia Golini* Chair: *Pasquale Valentini* Assessing environmental quality by clustering a structural equation model based index: An application to European cities air pollution *Mariaelena Bottazzi Schenone, Elena Grimaccia, Maurizio Vichi* Evaluating the nonlinear association between PM10 and emergency department visits *Andrea Bucci, Francesco Sanmarchi, Luca Santi, Fabrizio Giostra, Eleonora Tubertini, Simona Rosa, Nicola Nante, Davide Golinelli* Modelling air pollution effects on health via Bayesian spatio-temporal models *Massimo Ventrucci* Estimating spatially varying Gaussian Graphical Models to unveil relationships among pollutants in the Red River Delta in Vietnam *Nicola Pronello, Alex Cucco, Rosalba Ignaccolo, Luigi Ippoliti*

17:00 – 18:30	**Room 33**	**Invited session: Statistics in sports** Session supported by BDsports, ISI Groups on Sports and Math&Sport organized by *Marica Manisera, Rodolfo Metulini* Chair: *Rodolfo Metulini* Clustering Athlete Performances in Track and Field Sports *Raffaele Argiento, Alessandro Colombi, Lorenzo Modotti, Silvia Montagna* A Cross-Country Analysis of Engagement in Physical Activity and Sport Practice Learnt from Eurobarometer Survey Data *Rosaria Simone* Strong eras in male professional tennis *Kristijan Breznik, Vincenzo Candila, Antonina Milekhina, Marialuisa Restaino* NonParametric Combination method for data analytics in basketball matches *Elena Barzizza, Nicolò Biasetton, Riccardo Ceccato, Marta Disegna, Giacomo Vezzosi*
17:00 – 18:30	**Room 35**	**Invited session: Statistical methods for the analysis of university student choices and academic performance** Organizer and Chair: *Isabella Sulis, Marialuisa Restaino* The influence of labor market conditions on students' career disruption: first insights from Italy *Cristian Usala, Isabella Sulis, Mariano Porcu* Socio-economic aspects that may affect South-North students' mobility in Italy *Vincenzo Giuseppe Genova, Giovanni Boscaino* An analysis of student's performance in bachelor's degree *Michele La Rocca, Marcella Niglio, Marialuisa Restaino* An exploratory strategy for analyzing students' mobility data *Ilaria Primerano, Giuseppe Giordano*
18:30 – 20:00	**Room 31**	**Statistica e Futures Studies: un connubio sinergico.** **In ricordo di Antonio Pacinelli**

		Invited session: Statistics in football Session supported by BDsports, ISI Groups on Sports and Math&Sport organized by *Rodolfo Metulini, Marica Manisera* Chair: *Marialuisa Restaino* Community Detection in Sport Market Networks: The Case of Italian Professional Football *Roberto Rondinelli, Riccardo Ievoli*
18:30 – 20:00	**Room 33**	An Original Application to Football of PLS-SEM for the xG Model *Mattia Cefis, Maurizio Carpita* Performance Assessment of Football Players and Combined Permutation Tests with application to Home-Field Advantage *Stefano Bonnini* A first proposal of the triad census for weighted networks: an application to football *Roberto Rondinelli, Lucio Palazzo*
		Invited session: Advances in statistical learning from high-dimensional data Organizer and Chair: *Fabrizio Maturo* PCA approaches for vector functional time series *Ana M. Aguilera, Francisco J. Alonso, Christian Acal*
18:30 – 20:00	**Room 35**	Conformal Prediction for Functional Kriging Models *Andrea Diana, Elvira Romano, Jovanka Adzic* Measuring public-private connectedness in financial markets *Javier Sánchez García, Salvador Cruz Rambaud* An original approach to anomalies in intertemporal choices through Functional Data Analysis: Theory and application for the study of Hikikomori syndrome *Roberta Martino, Viviana Ventre, Salvador Cruz Rambaud, Fabrizio Maturo*
20:30		***Social Event - Welcome Cocktail "Rustelle" on the beach - Saturno Beach Club***

THURSDAY, AUGUST 31

Contributed session: Education and labour
Chair: *Eugenia Nissi*

Local concordance among the items of questionnaires on student's opinion (OPIS)
Silvia Terzi, Francesca Petrarca

High School Proficiency of Future University Students: an Analysis based on INVALSI Data
Francesco Santelli, Gioia Di Credico, Claudia Di Caterina

09:00 - 10:30   **Room 31**

Employment vulnerability of immigrants in the labour market – Does origin matter?
Muhammed Bittaye

The effect of pricing policies on students' use of university canteens
Lucio Masserini, Matilde Bini, Valentina Lorenzoni

Gig workers' identikit
Emma Zavarrone, Alessia Forciniti

Contributed session: Tourism and territory
Chair: Luigi Ippoliti

Multi-source approach for statistics in tourism sector
Antonella Bianchino, Daniela Fusco, Paola Giordano, Maria Antonietta Liguori, Donato Summa

Statistical analysis of tourism sustainability in Campania: post Covid-19 review
Massimiliano Giacalone, Vincenzo Basile, Marco Bellucci

09:00 - 10:30   **Room 33**

Investigating recent changes in dietary behavior
Angela M. D'Uggento, Francesco D. d'Ovidio, Ernesto Toma, Maria Giovanna Onorati

Depopulation in the Abruzzo municipalities
Assunta Lisa Carulli, Domenico Di Spalatro, Alessandro Valentini

The Productions System of Inland Areas
Agata Maria Madia Carucci, Antonio Regano

09:00 - 10:30	**Room 35**	**Contributed session: Social issues** Chair: *Rosaria Ignaccolo* Modelling the gender gap in youth mortality with an Age-Period-Cohort analysis *Giacomo Lanfiuti Baldi, Andrea Nigri* Random forest for classifying odor emission sources *Veronica Distefano, Monica Palma, Sandra De Iaco, Gideon Mazuruse* An experimental annotation task investigating annotator agreement within a misogynistic dictionary and corpus *Alice Tontodimamma, Elisa Ignazzi, Stefano Anzani, Lara Fontanella, Simone Di Zio* Statistical Analysis of COVID19 impact on Italian Mortality *Girolamo Franchetti, Massimiliano Politano* Measuring multidimensional deprivation using objective and subjective data: an application of the Voronoi ranking method *Mariateresa Ciommi, Francesca Mariani, Gloria Polinesi, Maria Cristina Recchioni*
10:30 - 11:00	**Room 28**	***Coffee Break***
11:00 - 11:45	**Room 31**	**Keynote Speech** **Planning a system of sustainable and resilent infrastructures: the role of data and models** *Enrico Giovannini* Chair: *Paolo Mariani*
11:45 - 13:15	**Room 31**	**Invited session: Labour market: trends, perspectives and new challenges** Organizer: *Matilde Bini* Chair: *Andrea Cutillo* Enriching Job Vacancy Official Information with Online Job Advertisements: Chances and Limits *Annalisa Lucarelli, Alessandra Righi* The effect of the recent pandemia on firms' employment in Italy *Alessandro Zeli, Leopoldo Nascia* Innovation in management: towards the open manager *Paolo Bruttini, Michele Gallo, Paolo Mariani, Tullio Menini* Newly employed in Italy: a longitudinal analysis *Lucio Masserini, Matilde Bin*i

11:45 - 13:15	**Room 33**	**Invited session: Data analysis for web sources** Organizer and Chair: *Andrea Marletta* Enhancing SMEs default prediction with web-scraped data *Lisa Crosato, Josep Domenech, Caterina Liberati* Web data as enabler for informed decisions in Labour Market *Gabriele Maggioni* The metaverse & luxury fashion brands: strategic communication exercise *Alessia Forciniti, Emma Zavarrone* Increasing the Geographical Granularity of Economic Indicators with Google Trends *Josep Domenech, Andrea Marletta*
11:45 - 13:15	**Room 35**	**Invited session: Methodological and applicative contributions for evaluating sustainable development** Organizer and Chair: *Ida Camminatiello* Discussant: *Antonio Lucadamo* Evaluating sustainable development in EU countries through synthetic indicators *Leonardo Alaimo, Marianna Cucci* Naples and tourism sustainability: A survey of citizens' perceptions *Massimo Aria, Francesca Pagliara, Luca D'Aniello, Valentina Della Corte* Modelling inequalities for sustainable development in Italy countries *Mario Musella, Gianmarco Borrata, Ida Camminatiello, Rosaria Lombardo* Food Security and Sustainability: A Science Mapping Analysis *Alfonso Piscitelli*

		Contributed session: Trends Chair: *Marco Di Marzio* The role of big data analytics in circular supply chains: a bibliometric analysis *Feroz Khan, Agnese Rapposelli* Estimation of the ranking of incentive policies for the adoption of 4.0 technologies *Stefano Bonnini, Michela Borghesi*
11:45 – 13:15	**Room 27B**	Risk Management and Future Scenarios. A proposal based on a mixed-method approach *Simone Di Zio, Mario Bolzan, Marco Marozzi, Manuela Scioni* Explainable artificial intelligence (XAI) through artificial intelligence from a human in the loop (HITL) perspective: an interview with ChatGPT *Vito Santarcangelo, Angelo Lamacchia, Sergio Vitullo, Michele Di Lecce, Massimiliano Giacalone* Relevance in official statistics: information needs, satisfaction with data quality, some results and future perspectives *Maria Francesca Loporcaro*
13:15 – 14:15	**Room 28**	***Lunch***
13:15 – 14:15	**Room 31**	**SVQS Members' Assembly**
14:15 – 15:15	**Room 31**	**Round Table** **The algorithm: l'arte di domare i dati tra Statistica, Intelligenza Artificiale e Cybersecurity** Organizer: *Matilde Bini* • **G.A. Franco Federici** • **Stefano Tomasini** • **Massimo Fedeli** • **Sante Dotto** • **Felice De Pascale**

		Invited session: Inequalities in the labour market Organizer and Chair: *Francesca Adele Giambona* Skill similarities across Italian regions: an analysis based on the online job advertisements. *Adham Kahlawi, Lucia Buzzigoli, Laura Grassini, Cristina Martelli, Francesca Giambona*
15:15 – 16:45	**Room 31**	Italian Labour Market reform and gender inequalities. *Caterina Marini, Vittorio Nicolardi* Intergenerational transmission of disadvantages in the Italian labour market: evidence from AD-SILC data. *Annalisa Busetta, Elena Fabrizi, Giancarlo Ragozini, Isabella Sulis* The dynamics of employment trajectories. Are there differences between Italian native and non-native workers? *Andrea Ciccarelli, Di Domizio Marco, Elena Fabrizi, Silvia Longhi*
		Invited session: Statistical methods and complexity for evaluation in finance Organizer and Chair: *Claudiu Hertelius* Financial networks resilience and shocks propagation *Roy Cerqueti, Matteo Cinelli, Giovanna Ferraro, Antonio Iovanella*
15:15 – 16:45	**Room 33**	How the choice of one parameter impacts the numerical stability of the efficient frontier *Claudia Fassino, Pierpaolo Uberti* Dynamic shrinkage for minimum variance combination of forecasts *Raffaele Mattera* Exploring the perception of the gender issue of Italian female entrepreneurs *Rosella Castellano, Jessica Riccioni, Azzurra Rinaldi*

15:15 – 16:45	**Room 35**	**Invited session: Networks data analysis: new perspectives and applications** Organizer and Chair: *Annalina Sarra* Describing Italian mobility trajectories in higher education *Vincenzo Giuseppe Genova, Giuseppe Giordano, Giancarlo Ragozini, Maria Prosperina Vitale* Collaboration networks: methodological issues and updated empirical evidence on Italian statisticians *Domenico De Stefano, Amin Gino Fabbrucci Barbagli, Francesco Santelli, Susanna Zaccarin* Mapping Asthma Complexity with Graph Theory: an Integrative Approach *Alex Cucco, Angela Simpson, Clare Murray, Sara Fontanella, Adnan Custovic* Investigating the patterns of Italian internal mobility: A network analysis at provincial level *Annalina Sarra, Dario D'Ingiullo, Adelia Evangelista, Eugenia Nissi, Davide Quaglione, Tonio Di Battista*
16:45 – 17:15	**Room 28**	***Coffee Break***
17:15		***Social Event – Guided Tour in Chieti and IES2023 Social Dinner***

FRIDAY, SEPTEMBER 1

Invited session: Statistical methods and models for land monitoring with spatio-temporal data
Organizer and Chair: *Maurizio Carpita*

Geo-referenced data and complex networks for measuring road accident risk
Gabriele Cantaluppi, Gian Paolo Clemente, Francesco Della Corte, Diego Zappa

09:00 - 10:30   **Room 31**

A comparison of geospatial models for car crash risk
Gabriele Cantaluppi, Giorgio Giardino, Diego Zappa

Geostatistical modelling of livestock-related PM2.5 pollution and scenario analysis for policymakers – Work in progress
Alessandro Fassò, Jacopo Rodeschini, Alessandro Fusta Moro, Francesco Finazzi

Functional clustering methods of space-time big data from mobile phone networks
Selene Perazzini, Rodolfo Metulini, Maurizio Carpita

Contributed session: Economic issues
Chair: *Simone Di Zio*

Evolutionary trends of start-ups in Italy: a case study
Pierdomenico Duttilo, Giulia Caruso, Barbara Iannone, Stefano Antonio Gattone

Permanent establishments and efficiency analysis with global enterprises
Antonio Frenda, Enrica Sepe

09:00 - 10:30   **Room 33**

Techniques and constructs in some recent market and organizational research
Ivan Arcangelo Sciascia

The value of buildings in the Italian general government balance sheet
Paola Santoro, Antonio Regano

Linear and nonlinear factors affecting default risk in the peer-to-peer lending market
Francesco Giordano, Sara Milito, Maria Lucia Parrella

09:00 - 10:30	**Room 35**	**Contributed session: Methodological issues** Chair: *Monica Palma* Macroeconomic Time Series Classification by Nonparametric Trend Estimation *Giuseppe Feo, Francesco Giordano, Marcella Niglio, Maria Lucia Parrella* A Normalization Method for Space-time Analysis of Evaluation and Quality Indicators *Matteo Mazziotta, Adriano Pareto* Unveiling Latent Structures: exploring Multidimensional IRT Models using Dirichlet Process Mixtures *Pasquale Valentini, Sara Fontanella, Lara Fontanella* On a technique to detect accounting data manipulation *Chiara Passamonti* A bibliometrix analysis of PLS-SEM *Ciavolino Enrico, Angelelli Mario*
09:00 - 10:30	**Room 27B**	**Contributed session: Economics and environment** Chair: *Stefania Fensore* Determinants of Water Conservation Behaviour and Spatial Heterogeneity in their Coefficients *Rashad Mammadli, Chiara Gigliarano* Modeling the economic burden of grass pollen allergoid immunotherapy *Massimo Bilancia, Danilo Di Bona* Swine fewer in Liguria: who does pay for economic losses? A causal analysis *Chiara Baggetta, Barbara Cavalletti, Matteo Corsi* Measuring Multidimensional Poverty of the Italian regions in the era of COVID-19 *Francesco M. Chelli, Mariateresa Ciommi, Chiara Gigliarano, Gloria Polinesi* Drivers of inflation: relationships changing over time *Oleksandra Sokolenko, Antonella Palumbo, Francesca Fortuna, Alessia Naccarato, Jonathan Marie* Environmental accounting and sustainable cities: an explorative bibliometric–based literature analysis *Amandeep Kaur, Aamir Javed, Antonio D'Andreamatteo, Agnese Rapposelli*
10:30 - 11:00	**Room 28**	***Coffee Break***

11:00 - 11:45	**Room 31**	**Keynote Speech** **An overall look at the cumulative chi squared and related methods** *Luigi D'Ambra* Chair: *Maurizio Carpita*
11:45 - 13:15	**Room 31**	**Invited session: Statistical methods and composite indicators for healthcare** Organizer: *Maria Gabriella Grassia, Corrado Crocetta* Chair: *Paolo Mariani* Longitudinal composite indicators to measure the quality of health services *Corrado Crocetta, Laura Antonucci, Rosanna Cataldo, Rocco Mazza* Past and Future of Doctor-Patient Communication *Nicola Tedesco, Emma Zavarrone and Alessia Forciniti* Network Analysis approach to customer satisfaction and service quality detection: an application to health - care services *Corrado Crocetta, Maria Gabriella Grassia, Marina Marino, Rocco Mazza, Violetta Simonacci, Agostino Stavolo* A project evaluation study on multiset Likert scale data *Violetta Simonacci, Marina Marino, Maria Gabriella Grassia, Michele Gallo*
11:45 - 13:15	**Room 33**	**Invited session: Distance and depth-based statistical learning methods for robust data analysis** Organizer and Chair: *Silvia Salini* Robust distance-based predictive models *Eva Boj, Aurea Grané, David Parron* Data depth for mixed-type data through multidimensional scaling. An application to biological age imputation *Ignacio Cascos, Aurea Grané, Jingye Qian* A compared protocol to improve clustering procedures *Aurea Grané, Marco Riani, Silvia Salini* Robust diagnostics for Linear Mixed Models with the Forward Search *Aldo Corbellini, Luigi Grossi, Fabrizio Laurini*

11:45 - 13:15	**Room 35**	**Invited session: Advanced statistical methods for pattern recognition** Organizer: *Francesca Fortuna* Chair: *Stefano Antonio Gattone* Unsupervised classification of NPLs recovery curves *Alessandra Carleo, Roberto Rocci* Living alone in Italian municipalities *Pierluigi Vellucci, Federico Benassi, Alessia Naccarato, Gerardo Gallo* Supervised learning from hig-dimensional data through dynamic updating of functional classification rules *Fabrizio Maturo, Francesca Fortuna, Tonio Di Battista* Assessing the effectiveness of coordination among Public Authorities in cohesion expenditure *Giuseppe Coco, Gianluca Monturano, Giuliano Resce*
11:45 - 13:15	**Room 27B**	**Invited session: Recent advances in statistical learning and data analysis** Session of the SIS - CLADAG organized by *Domenico Vistocco* and *Pietro Coretto* Chair: *Marcella Niglio* Discussant: *Cristina Davino* A Predictive Functional Principal Component Analysis of Well-Being Data L*aura Marcis, Maria Chiara Pagliarella, Renato Salvatore* Detecting the partition in the extended hierarchy of a dendrogram: an application on biomedical data *Valeria Policastro, Lucio Palazzo, Domenico Vistocco* Concordance measure for rankings *Pier Giovanni Bissiri, Marta Nai Ruscone* Quadratic discriminant scoring for selecting clustering solutions *Luca Coraggio, Pietro Coretto*
13:15 - 14:15	**Room 28**	***Lunch***

14:15 - 15:45	**Room 31**	**Invited session: Statistical methods for education and educational services** Organizer and Chair: *Enrico Ripamonti* Association between INVALSI scores and students' mobility in Italy: a preliminary analysis *Silvia Bacci, Bruno Bertaccini, Gabriele Lombardi, Valentina Tocchioni* Modelling Responses and Response Times: an application to Mathematics INVALSI data *Luca Bungaro, Roberto Desiderati, Stefania Mignani* Latent potential outcomes: An analysis of the effects of programs aimed at improving students' non-cognitive skills *Fulvia Pennoni, Francesco Bertolucci, Giorgio Vittadini* Cognitive Skills and Non Cognitive Skills to Analyze School and Students Performances *Giorgio Vittadini*
14:15 - 15:45	**Room 33**	**Invited session: Statistical methods for the assessment of transport services and sustainable emissions** Organizer and Chair: *Antonello D'Ambra* Sustainability assessment of urban transport by an LCA comparison on different technologies vehicles *Livia Della Ragione, Giovanni Meccariello* Passenger comfort prediction via time-series classification *Amalia Vanacore, Maria Sole Pellegrino, Armando Ciardiello* A statistical model to analyse driving behavior: a case study *Guido Rodia, Pasquale Sarnacchiaro and Vincenzo Acciarino* Aggregating judgments in non negotiable group decisions in trasport system *Pietro Amenta, Antonio Lucadamo*

14:15 - 15:45	**Room 35**	**Invited session: New advanced statistical methods for data science** Session of the SIS Group SDS organized by *Rosanna Verde* Chair: *Silvia Salini* A unified framework for two-dimensional clustering on preference-approvals: an analysis of Eurobarometer data *Alessandro Albano, Mariangela Sciandra, Antonella Plaia* Pandemic Data Quality Modelling: A Bayesian Approach *Luisa Ferrari, Giancarlo Manzi, Alessandra Micheletti, Federica Nicolussi, Silvia Salini* Explainable AI for Peer-to-Peer Credit Risk Management *Golnoosh Babaei, Paolo Pagnottoni, Thanh Thuy Do* Tackling misclassification in surveys about undeclared work via the EM algorithm *Maria Felice Arezzo, Giuseppina Guagnano and Domenico Vitale*
14:15 - 15:45	**Room 27B**	**Invited session: Innovations and challenges in official statistics** Organizer and Chair: *Matteo Mazziotta* Formal and informal networks of care for the elderly: regional profiles compared *Lorella Sicuro, Domenico Tucci, Rosalia Coniglio* Gender Gap: a multidimensional approach *Cira Acampora, Daniela Fusco, Maria A. Liguori, Margherita M. Pagliuca* First hypotheses for back recalculation of the Italian Household Budget Survey *Andrea Cutillo* Using Whatsapp in Official Statistics: a New tool for managing the Agriculture Census *Claudia Fabi*
15:45 - 16:15	**Room 28**	***Coffee Break***

		Invited session: Tourism, territory and data analysis
		Session SISTUR organized by *Fabrizio Antolini*
		Chair: *Fabrizio Antolini*
		Tourism, sustainability, and territory impact: an input-output analysis
		Giorgio Garau, Andrea Karim El Meligi
16:15 - 17:45	**Room 31**	The impact of big data in tourism
		Raffaela Ciuffreda, Choedon Choedon, Biagio Simonetti
		Neural network-based Prediction of Domestic Tourists' Lenght of Stay in Italy
		Fabrizio Antolini, Samuele Cesarini
		The management of cultural heritage in contexts of undertourism: a model for assessing the economic sustainability of public-private partnerships
		Francesco Calabrò
		Invited session: Methodological developments and applications for the assessment of student competencies
		Organizer: *Stefania Mignani*
		Chair: *Fulvia Pennoni*
		Modeling the main drivers of mathematical literacy of school-leaving students. Some evidence from the Invalsi tests
		Cristina Davino, Francesco Palumbo, Rosaria Romano, Domenico Vistocco
16:15 - 17:45	**Room 33**	Educational Data Mining: clustering students' performance over time
		Gioia Tarborelli, Matteo Farnè
		The nexus of cultural capital with participation in early childhood education
		Enrico Ripamonti
		High - and Low - Performing students and future career: a gender and social issue
		Patrizia Falzetti, Roberto Ricci

16:15 - 17:45	**Room 35**	**Invited session: Statistical methods for environmental monitoring and sustainability** Organizer and Chair: *Francesca Fortuna* Clustering spatial data through Optimal transports *Antonio Balzanella, Rosanna Verde* New interpretative insights for environmental air quality by means of FDA *Silvia Terzi, Alessia Naccarato, Francesca Fortuna* A Bayesian State-Space Model to Mitigate Unmeasured Confounding *Carlo Zaccardi, Pasquale Valentini, Luigi Ippoliti* Mining social media data for damage assessment in environmental disasters *Emiliano del Gobbo, Barbara Cafarelli, Luigi Ippoliti, Lara Fontanella*
16:15 - 17:45	**Room 27B**	**Invited session: Satisfaction and behaviour in tourism** Organizer and Chair: *Antonio Lucadamo* The evaluation of the hotel stay through a new development of correspondence analysis coping with ordinal variables *Antonello D'Ambra, Pietro Amenta* Assessing the role of knowledge and authenticity in the formation of attendee loyalty at cultural festivals *Francesca Rivetti, Antonio Lucadamo, Carla Rossi* Residents' Opinions and Perceptions of Tourism Development in the Historic City of Matera *Pasquale Sarnacchiaro, Roberta Di Gennaro, Enrico Di Taranto* Exploring tourism at religious sites: the case of Assisi *Francesca Rivetti, Mauro Dini, Simone Splendiani*
17:45 - 18:00	**Room 31**	**Closing ceremony**
18:30		*Social Event: Dinner among Vineyards rows*

DISFIPEQ

Sezione di Economia
e Metodi Quantitativi
Campus di Pescara