UNIVERSITÀ POLITECNICA DELLE MARCHE

COmposite Indicators for MEasuring Vulnerability of an Aging Italy (COMEVA)

Prof. Francesco M. Chelli (Supervisor)
Dr. Mariateresa Ciommi (Co-supervisor)
Prof. Domenico Potena (Co-supervisor)

Department of Economics and Social Sciences (DISES)
https://dises.univpm.it/
and
Department of Information Engineering (DII)
https://dii.univpm.it/

Supervisor: Prof. Francesco M. Chelli
Co-supervisor: Dr. Mariateresa Ciommi
Co-supervisor: Prof. Domenico Potena

UNIVERSITÀ POLITECNICA DELLE MARCHE

Supervisor: Prof. Francesco M. Chelli, Full Professor in Economic Statistics
(https://orcid.org/0000-0003-1056-0119, Scopus: 53 papers, 1642 citations, h-index 23)

Co-supervisor: Mariateresa Ciommi, Assistant Professor in Economic Statistics
(https://orcid.org/0000-0003-4131-4543, Scopus: 39 papers, 825 citations, h-index 11)

Co-supervisor: Domenico Potena, Associate Professor in Information Processing Systems
(https://orcid.org/0000-0002-7067-5463, Scopus: 143 papers, 1039 citations, h-index 18)

Professor Chelli is Full Professor of Economic Statistics and President of the Italian Statistical Institute (ISTAT).
He was Dean of the Faculty of Economics, Director of the Department of Economics and Social Sciences, Director of the Data Production department at ISTAT, President of the Italian Society of Economics, Demography and Statistics. He is Professor of Statistics, Economic Statistics and Statistics for the Digital Economy.

Dr Ciommi is Assistant Professor in Economic Statistics. She is a member of the Academic Senate. She worked as research fellow and Postdoctoral Researcher at UNIVPM. She is Professor of Business Statistics and Statistics for business decisions.

Professor Potena is Associate Professor in Information Processing Systems. He is involved in research and coordination activities within contracts and conventions concluded by his Department and has taken part in several regional, national and international projects. He has also had organizational roles in national and international conferences and reviewed numerous articles for international journals.

Professor Chelli and Dr Ciommi's main research interests deal with poverty measurement, mainly through composite indicators definition and computation over space (at national and local level) and over time. Professor Potena's main research interests include knowledge discovery in databases, data mining, big data, process mining, data warehousing and information systems.

UNIVERSITÀ POLITECNICA DELLE MARCHE

Supervisor: Prof. Francesco M. Chelli
Co-supervisor: Dr. Mariateresa Ciommi
Co-supervisor: Prof. Domenico Potena

Research grants:

- European Union-Next Generation EU. Project Code: ECS00000041; Title: Innovation, digitalization and sustainability for the diffused economy in Central Italy (VITALITY) (Ciommi, 250h/year)
- PRIN-PNRR2022: Quality of Work in Residential long-term care services in Italy: determinants and strategies (QWoRE). Project code: P2022E5M9Y (Ciommi, Member of the UNIVPM unit)
- European Framework for Measuring Progress - e-Frame (Grant agreement ID: 290520) Funded by European Commission - Europe 2020 strategy (Chelli, Ciommi)

Related publications:

- Mariani, F., Ciommi, M., Recchioni, M.C. (2023). Two in one: a new tool to combine two rankings based on the Voronoi diagram. *Social Indicators Research*, 1-17.
- Ciommi, M., Gigliarano, C., Chelli, F. M., Gallegati, M. (2022). It is the Total that Does [Not] Make the Sum: Nature, Economy and Society in the Equitable and Sustainable Well-Being of the Italian Provinces. *Social Indicators Research*, 1-32.
- Agovino, M., Casaccia, M., Ciommi, M., Ferrara, M., Marchesano, K. (2019). Agriculture, climate change and sustainability: The case of EU-28. *Ecological Indicators*, *105*, 525-543.
- Cela, E., Ciommi, M. (2018). Ageing in a multicultural Europe: Perspectives and challenges. *Building Evidence for Active Ageing Policies: Active Ageing Index and its Potential*, 211-237.
- Ciommi, M., Gigliarano, C., Emili, A., Taralli, S., Chelli, F. M. (2017). A new class of composite indicators for measuring well-being at the local level: An application to the Equitable and Sustainable Well-being (BES) of the Italian Provinces. *Ecological indicators*, *76*, 281-296.

UNIVERSITÀ POLITECNICA DELLE MARCHE

The research group is composed of professors and researchers from the Department of Economics and Social Sciences (DISES) and the Department of Information Engineering (DII).

- **Maria Cristina Recchioni:**

  (https://orcid.org/0000-0002-9049-6964, Scopus: 82 papers, 585 citations, h-index 13)
  - Director of the Department of Economics and Social Sciences (DISES) and Full Professor of Economic Statistics

- **Francesca Mariani:**

  (https://orcid.org/0000-0002-4068-3411, Scopus: 34 papers, 161 citations, h-index 9)
  - Assistant Professor of Economic Statistics

- **Marco Arlotti:**

  (https://orcid.org/0000-0002-5720-5651, Scopus: 32 papers, 113 citations, h-index 6)
  - Assistant Professor of Sociology of Economic Processes and Work

- **Alex Mircoli:**

  (https://orcid.org/0000-0001-6459-0335, Scopus: 24 papers, 180 citations, h-index 6)
  - Assistant Professor of Information Processing Systems

UNIVERSITÀ POLITECNICA DELLE MARCHE

The Department of Economics and Social Sciences
Director: Prof. Maria Cristina Recchioni

The Department of Economics and Social Sciences (DiSES) was established on 1 July 2011 from the merger of the Department of Economics with the Historical and Sociological area of the Department of Social Sciences, and the Applied Economics area of the Department of Management and Industrial Organization.

45 professors and researchers are affiliated with the Department: 27 belong to the economics area, 8 to economic statistics, 6 to the social sciences area, and 4 to economic history. The technical and administrative staff is made up of 10 people: the administrative secretary, 5 administrative and 4 technicians.

The main research areas developed concern: Growth and Economic Development, Demography, Econometrics, International Economics and Trade, Environmental Economics, Labor Economics, Industrial, Business and Innovation Economics, Monetary Economics, Public Economics, Regional Economics, Macroeconomics, Economic Sociology, Social and Health Organizations, Economic Statistics, History of Economic Thought, and Economic History.

https://dises.univpm.it/en/home-english/

AT A GLANCE

DISES

45 professors and researchers

Board Members and Associate Editors
- European Journal of Operational Research
- Journal of Economic Behavior & Organization
- Journal of Economic Interaction and Coordination
- Journal of Small Business Management
- Small Business Economics
- Italian Economic Journal

Bachelor Degree in:
- Digital Economics and Business 🇬🇧
- Economics and Business

Master Degree in:
- Economic and Financial Sciences
- Data Science for Business Management
- International Economics and Commerce 🇬🇧

Ph.D. in Economics 🇬🇧

Research center: CRISS
Research group: MoFiR

Public Engagement:
- Paolo Canofari: Independent expert for the Economic and Monetary Affairs Committee of the European Parliament;
- Francesco Maria Chelli: ISTAT pro tempore President;
- Marco Cucculelli: General Secretary of the Italian Economic Association; Top 2% Most Influential Scientists (Ranking Stanford)
- Riccardo Lucchetti: Member of the GRETL developer team

The Department of Information Engineering

Director: Prof. Franco Chiaraluce

UNIVERSITÀ POLITECNICA DELLE MARCHE

The Department of Information Engineering (DII) was established in 2011 following the merge of the previous DIBET (Department of Biomedical, Electronics and Telecommunication engineering) and DIIGA (Department of Computer, Management and Automation engineering).

The Department is a self-managing organizational branch of the university which is dedicated to scientific research, teaching, and contributing to the so called Third Mission of the Higher Education Institution through the dissemination of scientific research findings amongst the community.

Its main aims are to plan, organize and regularly assess the quality of the research activities carried out in the scientific sectors and disciplines under its jurisdiction; to plan, organize and manage bachelor and master courses in Information Engineering and, last but not least, to provide cultural and educational activities and contribute to training and guidance issues according to the students needs.

https://dii.univpm.it/en-gb/home/

AT A GLANCE

DII — 2023

250+ Publications

11 Scientific Area
ING-INF/01 ING-INF/02
ING-INF/03 ING-INF/04
ING-INF/05 ING-INF/06
ING-INF/07 ING-IND/31
ING-IND/35 MAT/09
SECS-P/06

65 Staff

> 4 M€ Research income

100 PhD, Post-doc, Research fellows

Bachelor Degree in: Biomedical Engineering, Electronic Engineering and Digital Technologies, Computer and Automation Engineering, Information Engineering for Videogame and Virtual Reality.
Master Degree in: Biomedical Engineering (in english), Electronic Engineering, Computer and Automation Engineering.

Bachelor Degree with professional orientation in Industrial and Information Systems (based in Pesaro).

DII coordinates the PhD in Information Engineering, organized in two curricula:
- Biomedical, Electronics, Telecommunication Engineering and Nanotechnologies (IBETN)
- Computer, Management and Automation Engineering (IIGA)

Research laboratories **32**

Supervisor Francesco M. Chelli
Co-supervisor Mariateresa Ciommi
Co-supervisor Domenico Potena

Project Title: COmposite Indicators for MEasuring Vulnerability of an Aging Italy (COMEVA)

The problem of aging is an irreversible global trend affecting all European Countries.

This is particularly true in Italy, where declining⬇ birth rates and better⬆ survival odds for older people have significantly aged its population.

Aim of this project is to propose the definition of new indicators able to capture the vulnerability of older people within the ▪health, ▪ social and ▪ economic domain, in order to ⟹ propose to policy makers new instruments able at catching changes. In this way, it would be easier for them to select the most effective interventions to improve the quality of their citizens' lives.

The joint expertise of DISES and DII members may lead to

new approaches in the measurement of vulnerability
in at least 2 different strands.

❑ On the one hand, the skills of DISES members on the construction of Composite Indicators may lead to new knowledge in the elderly population well-being.
❑ On the other hand, thanks to DII's expertise, to classical approaches for the measurement of vulnerability, natural language processing (NLP) techniques will be investigated.

Finally, the joint work of the two departments will focus on new approaches in the definition and construction of NLP scores (Sentiment scores).