

Elena Lucchese

Data economist for emergency systems

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ABOUT ME

I am an applied economist with **over 10 years of experience** in the analysis of **large-scale administrative data** and **impact evaluation**. I specialise in **emergency systems**: emergency dispatch centres, ambulance dispatch, emergency departments, staff shifts and productivity. I turn operational data into concrete decisions on vehicles, staff and response times, and I work closely with public bodies such as **AREU Lombardy**. I have led funded projects as **team leader**, from the initial idea to the final report for the client.

SKILLS AND EXPERIENCE

- ▶ **Data analyst**: causal inference (difference-in-differences, instrumental variables, regression discontinuity), panel data analysis, performance measurement and KPI design
- ▶ **Large-scale administrative data**: building and linking (record linkage) records of ambulance missions, emergency department visits, hospital admissions and mortality; integration with geographic and weather data
- ▶ **Emergency domain**: response times, dispatch protocols (MPDS), caller location, ambulance allocation, emergency department crowding, staff organisation and shifts; scenario analysis of the pressure on Lombardy hospitals depending on their technological equipment for stroke care
- ▶ **Tools**: Stata (advanced), Python and R (data analysis and modelling), SQL, ArcGIS, Microsoft Office, $\text{\LaTeX}$
- ▶ **Project management and team leadership**: design of funded projects, selection and coordination of collaborators, management of timelines and budget
- ▶ **Public speaking**: extensive experience in presenting complex data and technical results; public speaking at major international conferences and institutions; excellent communication skills
- ▶ **Publications and refereeing**: sole and co-author of scientific articles published in international peer-reviewed journals; referee for international peer-reviewed journals
- ▶ **Mentoring**: supervision of students preparing their degree theses
- ▶ **Languages**: Italian (native), English (fluent), Spanish (intermediate)

PROFESSIONAL EXPERIENCE

2022–present INDEPENDENT CONSULTANT

Data analysis, policy evaluation and simulation for public bodies and research institutions, including **AREU – Regional Emergency Agency of Lombardy**, **Niguarda Hospital, Milan** and the **Liguria Region**. Key results:

- Developed forecasting models for time-critical patients transported by ambulance, supporting operational decisions
- Ran quantitative simulations to assess organisational scenarios before their adoption
- Analysed burnout and occupational stress among healthcare and rescue workers for the Liguria Region (ProQOL questionnaire): doctors and nurses are more exposed to burnout, which grows with years of service, while women report more secondary traumatic stress
- Designed the study on contracts and productivity of emergency department physicians at Niguarda and managed the relationship with the data-providing institutions
- Showed that at Niguarda contract physicians are at least **24% slower** than employed physicians, with equal patient outcomes

2019–2025 UNIVERSITY OF MILANO-BICOCCA

Research fellow, applied economist and senior data analyst. Key results:

- As team leader, led two consecutive funded projects (€115,000 in total), from the analysis strategy to delivery of the final report

- Built and analysed administrative databases with over **4 million observations** on the emergency system
- Quantified that **1 extra minute** of average ambulance response time is worth about **105 additional deaths per year** in an Italian region
- Measured the effect of uncertainty about the caller's location: about **5 minutes of delay** (+30%) on urgent missions
- Evaluated the impact of the MPDS dispatch protocol on response times of the emergency dispatch centres in Liguria

2018–2019	UNIVERSITY OF ROME TOR VERGATA AND EIEF Research fellow, applied economist. Key results: – Presented results at leading international institutions: Bank of Italy, European Commission (JRC), IFS London, University of Melbourne – Won an individual EIEF grant (€10,000) for a project I designed and carried out independently
2015	ITALIAN SENATE Consultant in the working group on the regulation of the sharing economy. Key results: – Contributed to drafting a bill
2014–2015	UNIVERSITY OF BOLOGNA Data analyst and research assistant. Key results: – My analyses fed into a publication in the <i>Journal of Political Economy</i> (Fort, Ichino, Zanella, 2020)

FUNDED PROJECTS AS PRINCIPAL INVESTIGATOR

2024–2025	MODIGLIANI RESEARCH GRANT – UNICREDIT FOUNDATION Individual grant of €10,000: project design, analysis strategy and final report.
2020–2024	STARTING GRANT – UNIVERSITY OF MILANO-BICOCCA Two consecutive projects of €55,000 and €60,000: team leader, coordination of collaborators, management of timelines and budget.
2017	EIEF GRANT – EINAUDI INSTITUTE FOR ECONOMICS AND FINANCE Individual grant of €10,000: design, implementation and dissemination of results.

EDUCATION

2014–2018	UNIVERSITY OF BOLOGNA PhD in Economics. Thesis on the performance of emergency medical services (<i>Emergency Medical Performance: Why and How Should We Care?</i>)
2017	STANFORD UNIVERSITY, USA Visiting researcher for 7 months at the Center for Health Policy
2013	UNIVERSITY OF PADUA MSc in Economics and Finance, 110/110
2010	UNIVERSITY OF PADUA BSc in Business Administration

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