



PhD in DATA ANALYTICS AND DECISION SCIENCES - 39th cycle

THEMATIC Research Field: INFORMING BETTER POLICYMAKING WITH ENHANCED AND EXPANDED USE OF ADMINISTRATIVE HEALTH DATA

Monthly net income of PhDscholarship (max 36 months)
€ 1400.0
In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity	
Motivation and objectives of the research in this field	<p>Across Italy’s decentralized health and social care system, each region has access to diverse sources of administrative health and social care data. This rich data is a resource for epidemiological research and policy insight, such as trend prediction, disease monitoring, and resource planning. However, data quality is a concern when working with administrative data, as these data have usually not been collected for research but have instead been collected and prepared for financial or other administrative purposes. Overcoming this challenge is essential, as rapid evaluation of integrated administrative health data can be leveraged to address population health concerns and promote evidence-based policymaking at the local, national, and international level.</p> <p>Objective of the present proposal is the development of a comprehensive methodological framework for the inquiry of health administrative databases in Italy, to be used in a evidence-based approach to policy making. Such framework will allow and ease meta-analyses and comparison with other health databanks at international level.</p>
Methods and techniques that will be developed and used to carry out the research	<p>The research will draw on health systems research, policy analysis, and statistical methods to build on the opportunities offered by Italian administrative health data. One aspect of the research will focus on developing an approach to quality assurance and management of</p>



	<p>approach to quality assurance and management of administrative health data and how such data could be standardized across regions and scaled up to the national level. This will require the definition of suitable comprehensive quality framework, aligned with international standards.</p> <p>Another aspect will be to develop and apply statistical and machine learning methods combined with data visualization tools to administrative health data to generate epidemiological and public health insights on population health concerns.</p> <p>A final aspect will explore the development and application of novel statistical approaches to policy analysis to support decision making, monitor and evaluate policies, and inform new policy creation. Agent-based models as well as microsimulation approaches will be considered to this scope.</p>
Educational objectives	<p>To be able to critically analyse, model, ask and answer pertinent biological questions from data.</p> <p>To develop skills in statistical data analysis, machine learning, and their application to public health research and to epidemiological studies carried out over secondary databases.</p>
Job opportunities	<p>The profile proposed here are broadly relevant for a range of employers including (but not limited to): public and private healthcare institutions, hospitals, clinical and pharmaceutical companies, technology, and biotech companies, as well as Research institutes in healthcare domain.</p>
Composition of the research group	<p>1 Full Professors 1 Associated Professors 2 Assistant Professors 5 PhD Students</p>
Name of the research directors	<p>Francesca Ieva, Emanuele DiAngelantonio</p>

Contacts
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	700.0 €
By number of months	12

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information

List of Universities, Companies, Agencies and/or National or International Institutions that are cooperating in the research:

Health Data Science Center (HT)

Educational activities (purchase of study books and material, funding for participation in courses, summer schools, workshops and conferences): financial aid per PhD student per year
 1st year: max 1.902,38 euro per student
 2nd year: max 1.902,38 euro per student
 3rd year: max 1.902,38 euro per student

Teaching and lab assistantship. Availability of funding in recognition of supporting teaching and lab activities by the PhD student.
 Further support is available for students who engage in activities of teaching or additional lab duties coherent with their academic mission and doctoral training.
 The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.

Computer availability:
 1st year: individual use
 2nd year: individual use
 3rd year: individual use

Desk availability:
 1st year: individual use
 2nd year: individual use



3rd year: *individual use*