

**UNIVERSITÉ
TOULOUSE
CAPITOLE**



**TOULOUSE CAPITOLE
UNIVERSITY**

SUMMER SCHOOL

**ARTIFICIAL INTELLIGENCE &
QUANTITATIVE METHODS FOR
EMPIRICAL LEGAL RESEARCH**

JUNE • 10 - 18 • 2024

EMPIRICAL LEGAL RESEARCH

Empirical legal research systematically applies empirical methods to collect, generate, and analyze data, aiming to produce substantive insights into legal phenomena. This type of research encompasses a methodical approach to gathering both qualitative and quantitative data, ranging from court decision content and interview transcripts to statistical counts of case occurrences or imposed fines. The core objective is to employ empirical data to not only derive knowledge about the law and its practical application but also to rigorously test theories and hypotheses concerning legal rules, their operations and their effects. By integrating empirical methods, this research framework strives to illuminate the dynamics of law within society, offering a grounded understanding that supports theoretical exploration and hypothesis testing.

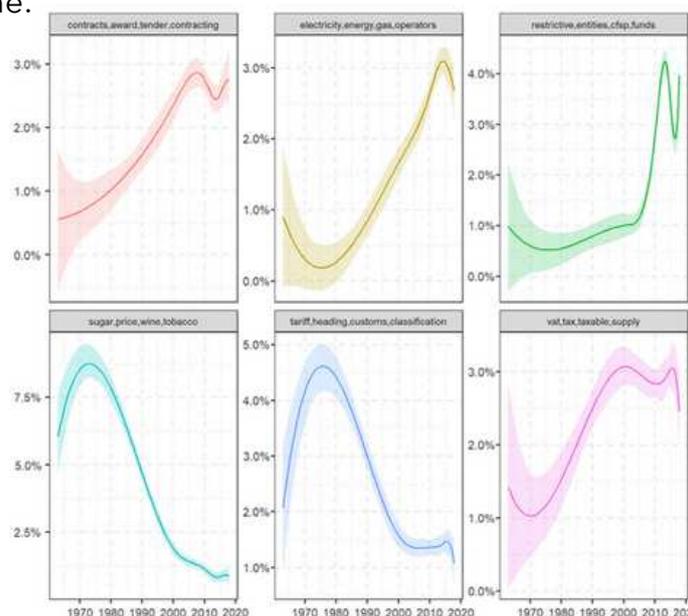


Van Kuppevelt et al. 2020

Inspired by methods used in the social and natural sciences, empirical legal research makes it possible to observe the behaviour of legal actors, gain a better understanding of how the law is produced and assess the impact of legal rules on reality. It can be used in all areas of law (private, public, history, etc.). It offers another way of describing and explaining the law and makes it possible to test hypotheses formulated by legal scholars. Its aim is also to contribute to an understanding of how the law operates in society.

FOCUS ON ARTIFICIAL INTELLIGENCE AND QUANTITATIVE METHODS

The integration of AI techniques, such as topic modeling, natural language processing (NLP), and machine learning, along with quantitative methods including inferential statistics, experimental approaches, and network analysis, represents a transformative frontier in empirical legal research. These advanced tools unlock the potential to analyze vast quantities of legal texts and judicial decisions. For instance, NLP can dissect complex legal language, identifying patterns and themes that might elude traditional scrutiny, while topic modeling can illuminate the underlying structures within legal discourse, revealing insights that could reshape our understanding. Similarly, statistical methods enable researchers to draw robust conclusions from empirical data, and network analysis can map the intricate relationships within legal precedents, illustrating how legal principles interconnect and evolve over time.



Dyevre et al. 2021

Embracing these methods opens a new realm of possibilities for legal scholars, offering powerful tools to navigate the vast sea of legal texts and to craft more informed, data-driven arguments. This approach not only enhances the rigor and scope of legal research but also equips scholars with the skills to tackle contemporary legal challenges in a more systematic and evidence-based manner.

A UNIQUE OPPORTUNITY

Aimed at legal scholars and Phd students in law, its objective is to give them the ability to develop an empirical research project in the field of law. The summer school provides accessible training in empirical legal research methods, taught by two internationally renowned researchers: the lessons will be taught in pairs by Prof. Arthur Dyevre (KU Leuven University, Belgium) and Prof. Gijs van Dijck (Maastricht University, Netherlands).

PROFESSOR ARTHUR DYEVRE is a researcher, writer and educator. His current research interests include judicial decision making, deceptive persuasion, behavioural comparative law (COMPASS Project) and inter-group biases in litigation. He teaches at the KU Leuven, the European University Institute (AI & Law Summer School) and Université Toulouse Capitole (ELR Summer School). He was Principal Investigator of the ERC-funded EUTHORITY Project, which delved into the dynamics of conflict and cooperation within the EU's multilevel legal system. His research lab in Leuven has promoted the use of empirical, experimental and machine learning methods in the legal field, organising inter alia the first two Conference in Empirical Legal Studies in Europe (CELS-E) in 2016 and 2018.



PROFESSOR GIJS VAN DIJCK integrates legal, empirical, and computational analysis in order to improve the description, application, understanding, and evaluation of the law. He has taught courses on tort law, contract law, property law, empirical legal research, and computational legal research. Gijs has published in top journals including the Journal of Empirical Legal Studies and the Oxford Journal of Legal Studies. He has been a speaker at various events, including ones at Oxford, Harvard, Yale, Duke and Cornell. He was a visiting scholar at Stanford University in 2011.





SUMMER SCHOOL PROGRAM

MONDAY, JUNE 10

2 pm - 5 pm - Introduction to Empirical Legal Research (optional)

The introduction will be taught by Julien Bétaille, Associate Professor at the Toulouse Capitole University and organiser of the summer school. It is aimed at those who want to learn the basics of empirical research before taking part in the summer school itself. After presenting its main characteristics, the empirical approach will be placed in the context of European legal thought, in particular in relation to the doctrinal and analytical approaches of law.

7 pm - Official Opening and Welcoming Dinner

TUESDAY, JUNE 11

Session #1 - Basics and Overview (9 am - 12 pm)

In the first session, the basics of empirical research will be explored. It will discuss the principles (reliability, validity), research designs (e.g., descriptive, causal), and data collection methods (inquiry, observation, analysis of existing data) of empirical legal research. Participants will then be invited to complete a questionnaire as well as several decision-making exercises. Depending on the pace of the session, the instructors may conduct an interactive game simulating a “dialogue of judges”.

Session #2 - Introduction to Python Programming for Legal Research (2 pm - 5 pm)

Statistical packages are available for conducting empirical research. Python has become the most popular programming language to collect, curate, format, and analyse data. Participants are introduced to the basics of the Python language via exercises and assignments.



WEDNESDAY, JUNE 12

Session #3 - Legal Data Analysis (9 am - 12 pm)

In this course, you will learn how to use legal information as data and apply quantitative methods to law. The course provides an understanding about how statistical analyses can help improve our understanding of the law and may help design innovative legal services and legal solutions. This session covers the basics of data analysis, including data harvesting, descriptive statistics, and regression analysis.

Session #4 - Network Analysis (2 pm - 5 pm)

Network analysis allows us to model and analyze connections between different entities: citations, individuals, organizations, etc. In this session, like in the legal field in general, we will focus particularly on case law citations and networks of jurists. Network analysis assists in the detection of important precedents and (sub)topics in a network of court decisions.

THURSDAY, JUNE 13

Session #5 - Data Analysis: Experimental Methods (9 am - 12 pm)

The randomized trial represents the gold standard in causal inference. Experimental methods are increasingly used in the legal field, notably to evaluate the success of programs or reforms. We will examine different types: vignette experiment, field experiment, and survey.

Session #6 - Data Analysis: Observational Studies (2 pm - 5 pm)

Rulings, statutes, treaties, most of what we spontaneously think of as legal data is observational as opposed to experimental. It is often the most and only available data, but it presents challenges of its own, particularly when it comes to identifying causal relations. In this session, we delve deeper into the advantages and limitations of the analysis of observational data and into how to analyse data collected with observational analysis.

FRIDAY, JUNE 14

Session #7 - Data Analysis: Textual Data (9 am - 12 pm)

A large part of legal data takes the form of texts. Advances in automatic text data analysis thus open up great prospects for empirical legal research. We examine document and topic modeling techniques and practice several exercises on texts of decisions of the Court of Justice of the European Union.

Session #8 - Group project (2 pm - 5 pm)

This session is devoted to the group project. In a hands-on manner, a research plan will be designed and drafted. The instructors will provide feedback to the research designs and envisioned analysis.



SATURDAY, JUNE 15 - SUNDAY, JUNE 16

Session #9 - Work on group project

MONDAY, JUNE 17

Session #10 - Feedback (9 am - 12 pm)

Feedback will be provided by the instructors on the group projects.

Session #11 - Work on group project (2 pm - 5 pm)

This session will be devoted to finalizing the project.

TUESDAY, JUNE 18

Session #12 - Presentations (9 am - 12 pm)

Closing lunch





TERMS OF PARTICIPATION

PREREQUISITES

This training programme is specifically designed for lawyers and law students with no experience in empirical research. **No specific statistical or mathematical knowledge is required.** Concepts and methods, including Python programming, are introduced in simple and intuitive terms with the help of multiple hands-on exercises. It is important to keep in mind that each session builds on the previous one. Therefore, "à la carte" participation is strongly discouraged. Participants must possess a computer with a stable WiFi connection. In-class exercises will be done through Google Colab. To use it, participants must have a Gmail address.

VENUE: Manufacture des tabacs, 21 allée de Brienne, Toulouse (France)

REGISTRATION FEE: 200 euros

- Registration fees include welcoming diner, lunches, coffee breaks and a guided tour of the city of Toulouse.
- Registration is free for members of the Toulouse Capitole University. The summer school will be validated as part of the training offered by the doctoral school.

CAPACITY: 25 students

APPLICATIONS

Applications must be sent to myriam.greusard@ut-capitole.fr before **22 April 2024** in the form of a CV and a letter setting out your motivation for attending the summer school. An answer will be provided before the end of April to help you organise your stay in Toulouse.

SUGGESTED ACCOMMODATION

- Cité internationale des chercheurs de l'Université de Toulouse: www.en.cite-internationale-toulouse.fr (from 85 euros/night)
- Youth Hostel: <https://lapetiteaubergedesaintsernin.com/en/hostel-toulouse/> (from 25 euros/night)





QUESTIONS:

About the practical organization: Nathalie.Castex@ut-capitole.fr

About the content of the summer school: julien.betaille@ut-capitole.fr

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