W03 / Application of recent advances in Natural Language Processing for Public Policy Research

Topic : Policy Design, Evaluation, Policy Analysis

Chair : Edgar Salas Gironés (Delft University of Technology)

Second Chair : Dewulf Art (Wageningen University)

Third Chair : Pradeep Murukannaiah (Delft University of Technology)

CALL FOR PAPERS

Recent developments in Artificial Intelligence, and particularly in Natural Language Processing (NLP), allow public policy researchers to work with large collections of texts. Such developments offer ample opportunities for taking public policy research into new directions. However, the use of NLP in public policy has been limited, despite its adoption in adjacent disciplines (e.g. political science). We believe this has occurred due to the limited venues for researchers using NLP and due to the fast pace of development of NLP techniques.

For the aforementioned reasons, this workshop has two aims. First, to bring together public policy researchers using NLP for their research, and secondly to discuss innovative approaches in which NLP can be used to study public policy concepts and theories. In doing so, this workshop intends to contribute to accelerate the adoption in public policy research. The guiding questions of this workshop are: How can Natural Language Processing (NLP) techniques be used to research public policy concepts and theories? Which new research directions does NLP allow policy scholars to pursue?

This workshop particularly encourages the submission of empirical research using NLP and other approaches using text-as-data, as well as invites contributions linking such techniques with the advancement of public policy concepts and theories. The workshop format consists of paper presentations, followed by discussions. This workshop intends to organize, in the final session, an open discussion with the workshop participants on how we can structure the emerging field of NLP for public policy research and discuss ways to go forward.

ABSTRACT

Over the last decade, the use of Natural Language Processing (NLP) has gained momentum in the social sciences, allowing to work with large quantities of text. NLP offers new possibilities on how to conduct public policy research: for instance, by allowing new qualitative research strategies, collecting data using new methods, or automating activities like coding.

The adoption of NLP in public policy research remains limited, despite having gained prominence in related disciplines, e.g. political science. Moreover, it has been primarily used for exploratory research such as using topic modeling. While applications of NLP in public policy research have remained inductive and exploratory, theory-driven applications of these methods are what holds most promise. For instance, NLP has been used to identify public values (Pelaez et al., 2023), to retrieve context-specific values (Liscio et al., 2021), to extract arguments from opinions (van der Meer et al., 2022), to identify and extract argumentative structures (Lawrence & Reed, 2019), and to automate manual coding of texts (Zhou, 2018). We observe that such methods open exciting opportunities for policy scholars in studying concept and theories, such as agenda setting (Zahariadis, 2016), policy integration (Biesbroek et al., 2020), policy framing (Van Hulst & Yanow, 2014), or policy diffusion (Linder et al., 2020), to name a few examples.

This workshop invites applications of public policy research using NLP techniques. The aims are to bring together policy researchers using NLP and to discuss how can NLP be applied to study public policy concepts and theories. The workshop guiding questions are: How can Natural Language Processing (NLP) techniques be used to research public policy concepts and theories? Which new research directions does NLP allow policy scholars to pursue? It strongly encourages applications of empirical research using NLP and will consist of paper presentations followed by interventions of two discussants.

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Session 1Introduction, NLP and policy cohesion

Wednesday, June 26th 10:15 to 12:00 (AULA 15)

Intergovernmental relations in a federalist system: policy alignment and student achievement differences in the state of São Paulo, Brazil

Filipe Recch (University of Pittsburgh)

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Session 2NLP and policy implementation

Wednesday, June 26th 14:00 to 17:15 (AULA 15)

An Ideational Policy Analysis of How the Universal Benefit Reform Emerged in Finland Utilizing Large Language Models

Pasi Moisio (Finnish Institute for Health and Welfare (THL))

Merita Mesiäislehto (Finnish Institute for Health and Welfare)

Johanna Peltoniemi (Finnish Institute for Health and Welfare)

Mika Pihlajamäki (Finnish institute fo health and welfare)

Unveiling the Nature of Flemish Ministerial Advisors: An Empirical Study through NLP Techniques (2000-2020)

Tom Bellens (Katholieke Universiteit Leuven)

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Session 3NLP and grand challenges

Thursday, June 27th 09:00 to 12:15 (AULA 15)

(Virtual) Multilingual topic modelling of United Nations environmental initiatives lessons from collaborations on food, water and climate

Anne Sietsma (Wageningen University)

Agenda setting for climate change adaptation in the Netherlands and the UK: an NLP analysis

Dewulf Art (Wageningen University)

Robbert Biesbroek (Wageningen University)

Inferring Sceptical Stances of Climate Change on Tweets from Multi-modal Representation Models

Nan Bai (Wageningen University)

Dewulf Art (Wageningen University)

Tamara Metze (Delft University of Technology)

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Session 4NLP and science, technology, & innovation

Thursday, June 27th 14:00 to 17:15 (AULA 15)

(Virtual) Using natural language processing to assess institutionalization of techno-economic paradigms: an evaluation of European Commission reports on the bioeconomy

Matt Wilder (University of Toronto)

Revealing semantics: evaluating the implementation and effectiveness of the EU Smart Specialisation Strategy

Deyu Li (Utrecht University)

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Session 5NLP and public participation

Friday, June 28th 09:00 to 12:15 (AULA 15)

What Voices are Heard in the Regulatory Policymaking Process? Key Point Analysis of Regulatory Comments using NLP

Edgar Salas Gironés (Delft University of Technology)

Pradeep Murukannaiah (Delft University of Technology)

The effect of large language modelling on government transparency: the case of regulations.gov

Alex Ingrams (Institute of Public Administration - Leiden University)

Pradeep Murukannaiah (Delft University of Technology)

Sarah Giest (Leiden University)

Edgar Salas Gironés (Delft University of Technology)