P220 / Uneven data, uneven policy? Spatial inequality in data-driven and AI-enabled policymaking

Topic : Implementation/Street-Level Bureaucracy

Chair : Sarah Giest (Leiden University)

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GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

Governments increasingly use administrative data, predictive models and AI to define policy problems, target interventions and allocate resources. Research on data-driven and algorithmic governance has examined accountability, transparency, administrative capacity and public values, and has shown that institutional and political contexts shape how data are turned into policy decisions (Vydra & Klievink, 2019). The spatial side of these developments has received much less attention: where data are produced, where systems are deployed, and how their effects differ between places. Digital systems are typically designed to work the same way everywhere. In practice, they are built, implemented and experienced in places with very different institutions, infrastructures and social networks (Ash et al., 2018; Giest, 2025).

This panel connects public policy scholarship with work on data gaps (Giest & Samuels, 2020), data justice (Heeks & Shekhar, 2019) and digital spatial justice (Tedeschi, 2024). Our starting point is that spatial inequality affects more than who has access to digital technology. It also determines what data exist about a place and how those data are read. Places and populations are unevenly represented in administrative and digital infrastructures, including official statistics, where choices about spatial units, indicators and disclosure rules determine what can be seen at which scale. A neighbourhood can be highly visible through indicators of risk or deprivation while its informal networks, social infrastructure and local capacities barely register. These partial pictures then feed into predictive models and AI-supported decisions: a welfare fraud risk model deployed only in selected low-income neighbourhoods, a deprivation index that steers regional funding, satellite-based poverty maps used for targeting. In doing so, they can entrench existing biases and produce new territorial inequalities. The panel asks: *how do spatial inequalities shape data-driven and AI-enabled policymaking, and how do these technologies in turn reshape the governance of places and the distribution of public resources?*

We organise the panel around three dimensions:

Visibility and representation: Looking at data infrastructures, models and AI systems that represent places, populations and problems selectively, for example: uneven data coverage shaping territorial needs;

Differentiated implementation: Standardised digital systems that are implemented in very different local contexts, linked to, for example, local institutional capacity, digital and social infrastructure, and intermediaries such as frontline organisations, municipalities and civil society that shape how data-driven policies work;

Redistribution and feedback: Related to data-driven classifications that affect territorial prioritisation, resource allocation and relations between levels of government.

The panel's theoretical contribution is to treat place as both an input to and an outcome of data-driven governance. It links this recursive relationship to core public policy concepts: policy design, implementation, governance capacity, policy feedback, and the distribution of authority and resources.

References

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Giest, S., & Samuels, A. (2020). 'For good measure': Data gaps in a big data world. Policy Sciences, 53(3), 559–569. https://doi.org/10.1007/s11077-020-09384-1

Heeks, R., & Shekhar, S. (2019). Datafication, development and marginalised urban communities: An applied data justice framework. Information, Communication & Society, 22(7), 992–1011. https://doi.org/10.1080/1369118X.2019.1599039

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Vydra, S., & Klievink, B. (2019). Techno-optimism and policy-pessimism in the public sector big data debate. Government Information Quarterly, 36(4), 101383. https://doi.org/10.1016/j.giq.2019.05.010

CALL FOR PAPERS

We invite theoretical, empirical and methodological papers on the spatial dimensions of data-driven and AI-enabled policymaking. We are especially interested in *work that treats place as more than background, showing how spatial conditions, data infrastructures and governance arrangements interact to shape policy processes and outcomes*.

Papers might address, for example:

> ***Data gaps and spatial bias:*** Which places, populations and forms of local knowledge are missing or misrepresented in policy data? What role do statistical offices and other data producers play in defining the spatial units and indicators through which places become visible to policy? How do these gaps and choices carry over into models and AI-supported decisions?

> ***Implementation across places:*** How do local capacity, digital and social infrastructure, and intermediaries affect how standardised systems are used, adapted or resisted?

> ***Authority, allocation and feedback***: How do data and AI shift decision-making across levels of government and reshape resource distribution? How do data-driven interventions change the conditions under which future data are produced? Can participatory data practices or alternative governance arrangements interrupt cycles of spatial disadvantage?

We welcome papers from any policy domain, including social and welfare policy, health, environmental and climate governance, urban and regional development, infrastructure and public service delivery. We also welcome work at any scale, from neighbourhoods and rural municipalities to regions and cross-national comparison. Studies of the uneven adoption and diffusion of data and AI across places are as welcome as studies of their effects. We are interested in cases where data-driven tools reduced territorial inequality as well as cases where they deepened it. We particularly encourage comparative work and contributions from or about the Global South, as well as from researchers and practitioners working on official statistics. We are open to all methods, including conceptual work, but ask that papers make their contribution to public policy theory explicit, for example to debates on policy design, implementation, capacity or feedback.