NR30 / Models to Decisions: Systems Approaches for Complex Policy Problems

Topic : Research

Chair : Payal Dey (IIM Bodh Gaya)

Second Chair : Omkar Buwa (Indian Institute of Technology, Bombay)

Third Chair : Anand Rao (Indian Institute of Technology, Bombay)

Fourth Chair : K Dinesh (National Institute of Technology, Warangal)

GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

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Abstract

Public policy challenges in developing economies are increasingly marked by complexity, non-linearity, institutional fragmentation, and deep uncertainty. Issues such as climate change, air pollution, public health, digital governance, urban mobility, and social protection intersect in ways that defy linear or siloed approaches. Although governments have begun experimenting with systems-oriented tools, such as participatory methods, scenario building, feedback mapping, and cross-sectoral diagnostics, scholarship remains limited on how such tools are applied, interpreted, and institutionalised within governance establishments across the Global South.

The panel seeks to contribute to the conference theme by examining how systems thinking and associated methodologies are shaping contemporary policy research and practice. Building on the expanding literature on complex or ‘wicked problems’, adaptive policymaking, institutional analysis, and collaborative governance, this panel aims to identify how empirical studies from Global South contextualizes, challenges, or reframes existing theoretical foundations. Through the perspectives of researchers and practitioners using systems tools, the panel will explore how these approaches uncover feedback, anticipate unintended consequences, challenge dominant assumptions, and support resilient decision-making.

Research Question(s)

The panel invites contributions that address, amongst others, the following questions:

- How do systems tools support policymakers to understand policy problems in ways the conventional analytical methods may not?
- What are the institutional, legal, and practical constraints that affect how systemic approaches are adopted and applied in developing-country policy environments?
- How do researchers, analysts, and practitioners collaborate to ensure that the systems models remain credible, communicable, and ethically grounded?
- How can ‘Wicked Problems’ in public policy specify real-world examples illustrating systems analysis, influencing regulatory choices, implementation strategies, or institutional reforms?
- What new methodological innovations emerge in studying complexity and uncertainty in the Global South?

CALL FOR PAPERS

Developing economies are characterized by unique governance constraints such as limited data, institutional fragmentation, bureaucratic path dependence, contested legal orders, and overlapping political priorities that shape both policy design and research practices. As systems-based tools gain prominence within government initiatives such as climate, health, water, energy, and urban systems, the demand to translate complex models into actionable insights for decision-makers has intensified. Understanding how such tools are interpreted, negotiated, and adapted in specific institutional settings is vital for building a corpus of coherent body of public policy knowledge reflecting Global South realities. Comparative research across India, South Asia, Africa, and Latin America reveals notable convergences in the manifestation of systemic challenges, positioning the region as an important site for theoretical and methodological advancements in systems-oriented policy scholarship.

This panel will focus on academic scholarship addressing the governance challenges of developing economies: papers will aim to explore methodological innovations in studying law–policy intersections, comparative governance in the Global South, and the role of interdisciplinary frameworks such as systems thinking in themes including technological governance, digital inequality, climate change, urban transformation, human rights in digital spaces, etc. The research track will highlight how developing economies are not only case studies but also producers of theoretical insights that can shape global debates.

The panel invites theoretical, empirical, and methodological papers. These can include systems modeling, participatory or co-produced approaches, policy simulations, institutional analysis, case studies, or cross-country comparative research. In particular, work reflecting critically on the limitations, assumptions, and interpretive challenges of systems tools is welcomed.

List of Previously Published Suggestive Papers:

- Elias, A. A. (2021). Kerala’s innovations and flexibility for Covid-19 recovery: Storytelling using systems thinking. Global Journal of Flexible Systems Management, 22(Suppl 1), 33-43.
- Gujral, H., Damani, O., Agarwal, A., Becker, C., Franklin, M., Kramarz, T., Sutaria, R., Dey, S., & Easterbrook, S. (2026). Reimagining urban air-quality governance: A systems-thinking framework. Science of the Total Environment, 1010, 181059.
- Dey, P., Gupta, M. P., Sushil, & Perez?Arriaga, I. J. (2025). Rural electrification in India: A wicked problem. Systems Research and Behavioral Science, 42(3), 875-894.
- Nafees, Z., AboAlfa, M., & Alkhaldi, M. (2025). Operationalizing systems thinking approach to sustain public health rehabilitation programs: a rapid review and strategic synthesis. Frontiers in Rehabilitation Sciences, 6, 1633596.