

Complexity Science in Policymaking: Why the Promise Falls Short

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Complexity Science, Policymaking, Challenges

BACKGROUND

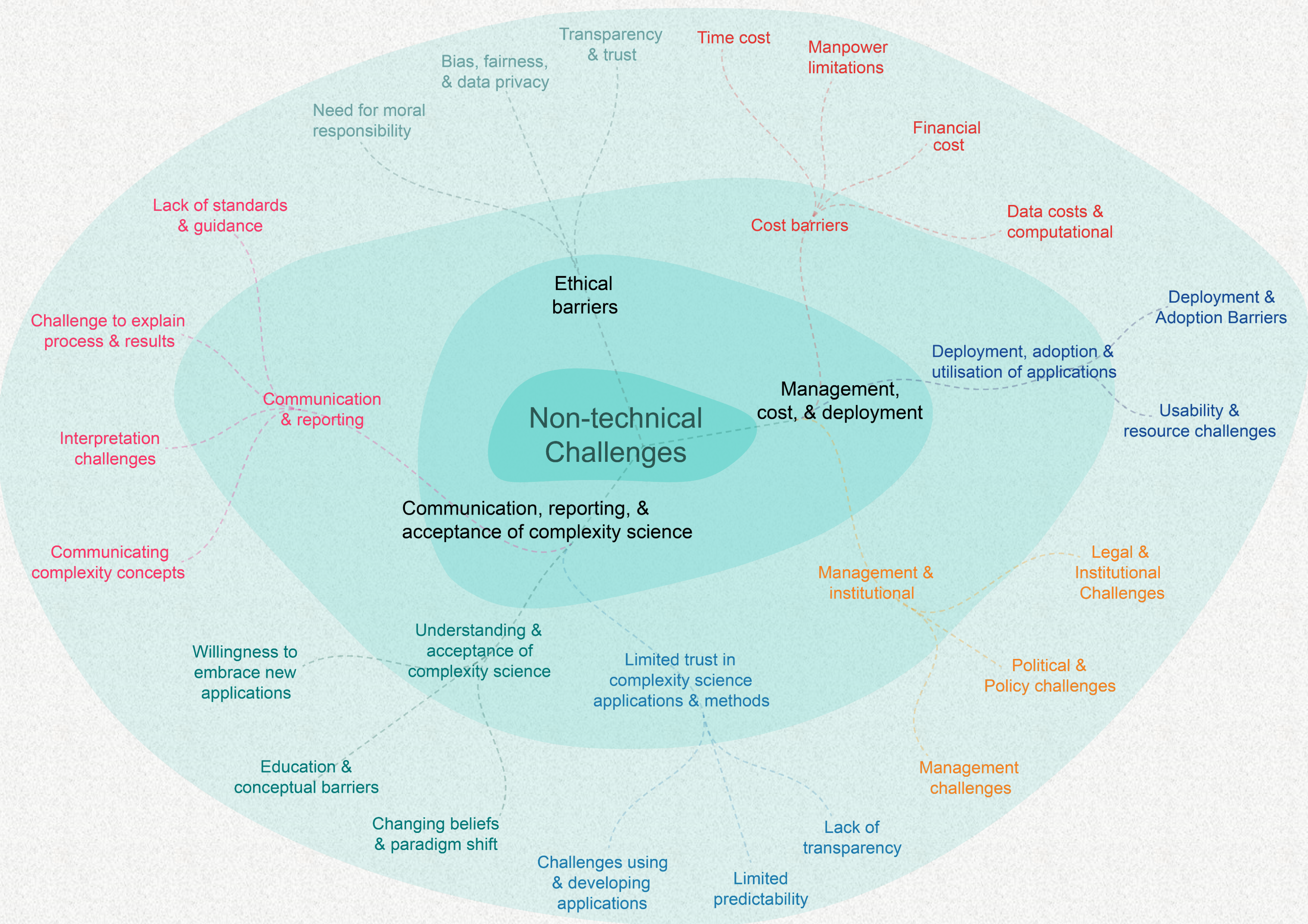
Cities are becoming increasingly complex. As a result, cities behaviors are progressively more unpredictable possibly more vulnerable to unforeseen events. As a result, for nearly eight decades, decision makers have been encouraged to make use of complexity science-informed approaches to understand and manage complex and dynamic cities.

RESEARCH GAP

The utility of complexity science in policymaking is recognized, its adoption into policymaking remains limited. Existing research has not explored why complexity science remains underutilized in policymaking.

FINDINGS

Identified 58 unique non-technical barriers to the use of complexity science. The barriers were synthesized into three thematic groups, namely: 1. Management, Cost, and Adoption Challenges: Issues surrounding the logistical and resource implications of adopting new methodologies. 2. Communication, Acceptance, and Trust Issues: A lack of trust and effective communication between scientists and policymakers. 3. Ethical Barriers: Ethical dilemmas that arise from applying complexity science to policymaking.

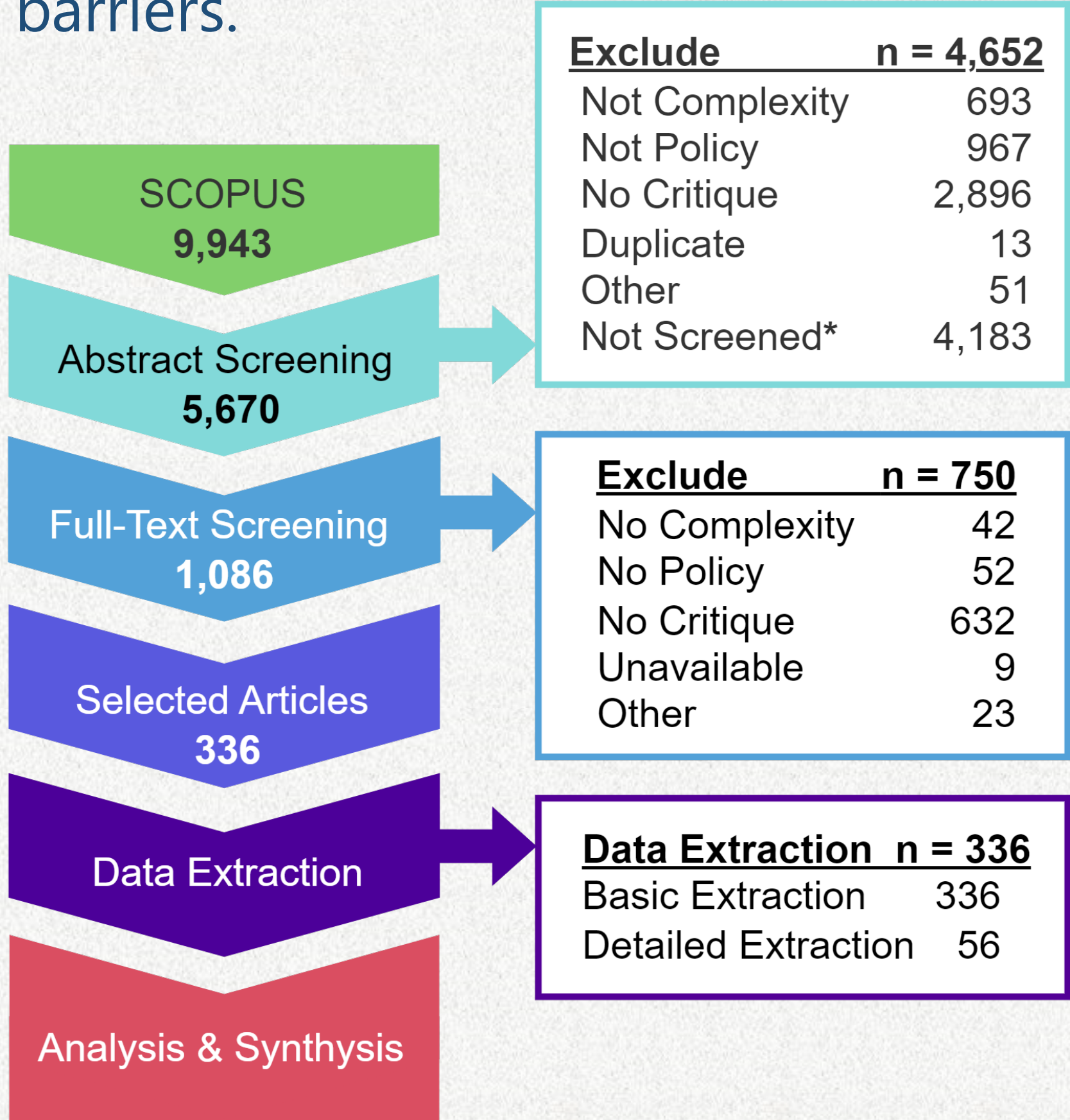


AIM

To identify and analyze the dominant non-technical barriers limiting adoption of complexity science in policymaking and explore possible means to overcome these challenges.

METHODS

Scoping review of the literature intersecting complexity science and policymaking to identify the dominant non-technical challenges. Identified 9,943 abstracts from the SCOPUS database. Through the screening process, 336 papers were selected. The studies were analyzed through a thematic synthesis and used to develop a framework of non-technical barriers.



KEY DISCUSSION POINTS

- Resource Management and Training:** Enhance management practices and allocate resources to train policymakers on complexity-informed methods.
- Strengthen Communication:** Establish robust communication channels between complexity scientists and policymakers to facilitate the translation of complex insights into policy actions.
- Build Trust Through Demonstrable Success:** Use pilot projects and documented case studies to build trust and showcase the benefits of complexity science in real-world scenarios.
- Develop Ethical Guidelines:** Create comprehensive ethical frameworks to guide the ethical application of complexity science, ensuring fairness and risk mitigation in policymaking.

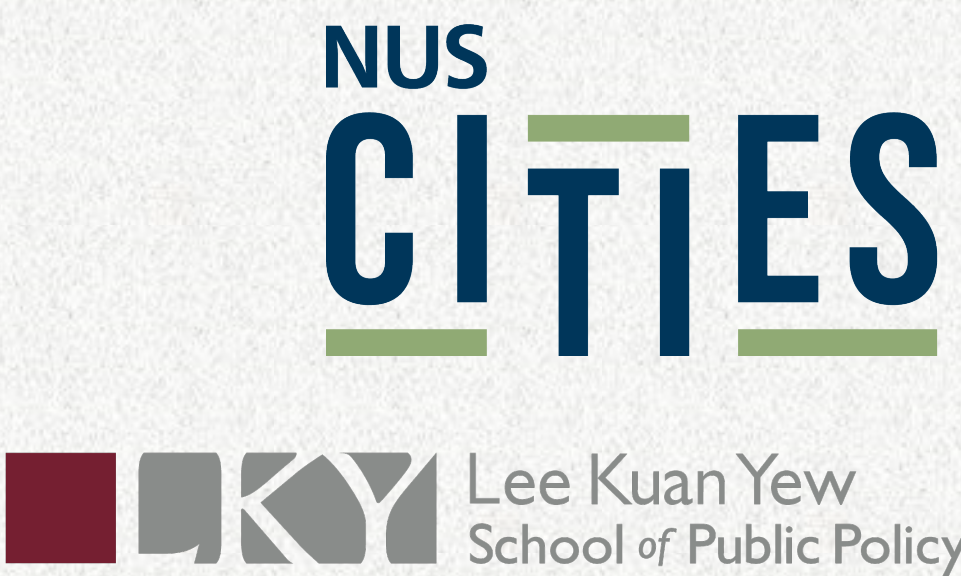
CONCLUSION

The study underscores the potential of complexity science to enhance policymaking but highlights significant non-technical barriers impeding its broader adoption. Addressing challenges related to management practices, communication gaps, trust deficiencies, and ethical concerns is crucial. The proposed framework aims to guide policymakers in overcoming these

barriers, fostering an environment where complexity-informed approaches can be more readily integrated into the policy process. By doing so, policymakers can better navigate the intricacies of modern governance challenges, leading to more effective and adaptable policy outcomes.

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