Editorial: Environmental governance in resilient cities: multidisciplinary approaches

Chenchen Shi[1,2]*

[1]School of Urban Economics and Public Administration, Capital University of Economics and Business, Beijing, China, [2]Beijing Key Laboratory of Megaregions Sustainable Development Modeling, Capital University of Economics and Business, Beijing, China

Editorial on the Research Topic
Environmental governance in resilient cities: multidisciplinary approaches

In light of the escalating environmental risks such as climate change, resource depletion, and environmental pollution, the construction of resilient cities has become an imperative in today's urban management and research practices. Before diving deep into the specific articles, it is essential to understand the broader framework of urban resilience.

Urban resilience refers to a city's ability to adapt and thrive amidst various challenges, and assessing this resilience entails three core components.

1) **Identifying threats to urban systems**: This involves recognizing both imminent and potential challenges a city might face, ranging from environmental to socio-economic.
2) **Determining levels of vulnerability to these threats**: Different cities, depending on their geographical, economic, and social standings, have varying vulnerabilities to threats. Some might be more susceptible to flooding, while others might be more vulnerable to economic downturns.
3) **Considering available strategies for minimizing vulnerability to these threats**: Once threats and vulnerabilities are identified, the focus shifts to formulating strategies to counteract or mitigate these challenges.

Governance plays a pivotal role across all these components. It is not only about the formulation but also the effective implementation of strategies. The challenges faced by cities in this regard are manifold, ranging from limited resources, varied stakeholders with sometimes conflicting interests, to the rapidly changing nature of threats due to global dynamics. Comparing individual cities in terms of determinants of resilience can provide a nuanced understanding and a clearer blueprint for action.

With this broader understanding, let's delve into this Research Topic, "*Environmental Governance in Resilient Cities: Multidisciplinary Approaches.*" It aims to explore the challenges and solutions that underpin sustainable urban development, with each piece offering a unique perspective within the overarching theme of resilience and governance.

The seven articles (six original researches and one review) published under this Research Topic offer a rich tapestry of insights, methodologies, and case studies that advance our understanding of environmental governance in resilient cities. Each piece contributes to the broader discourse in a unique way, highlighting the importance of an integrated mechanism of urban resilience for the construction of resilient cities and environmental governance.

(1) The paper by Wang et al. offers a significant exploration into the role of big data in green economic development, particularly in the context of China. The authors' innovative approach of integrating environmental and sustainability concepts into their research framework, alongside their robust methodological use of green total factor productivity (GTFP) and text analysis, provides a fresh perspective on the intersection of big data and green economic development. Their findings underscore the potential of big data in promoting environmental governance and resilience in cities, revealing its positive impact on green technology progress and its varied effects across different areas and periods.

(2) The paper by Peng et al. provides a comprehensive exploration of the impact of livestreaming supply chains on carbon emissions, a Research Topic that has not been extensively studied before. The authors develop a mathematical model to optimize the total cost of a livestreaming supply chain under collaborative operation, which includes operating and environmental costs. This model is applied under three governance scenarios: carbon tax, carbon trading, and a combination of both. The paper's findings offer valuable insights for governments and firms looking to promote low-carbon development of livestreaming supply chains. Furthermore, the study's focus on the intersection of technology (livestreaming sales) and environmental governance is particularly relevant in the context of resilient cities, where the integration of innovative solutions and sustainable practices is crucial.

(3) "*Association between ecological risks and ecosystem services in an urban agglomeration in arid China*" by Huang et al., provides a comprehensive analysis of the ecological risks and ecosystem services in the Urban Agglomeration on the Northern Slope of the Tianshan Mountains, a region facing severe ecological and environmental issues due to rapid urbanization. The authors' innovative three-step evaluation framework integrates ecological risk assessment with ecosystem service evaluation, providing a novel approach to understanding and addressing the challenges faced by urban agglomerations in arid areas. The study's findings offer valuable insights for regional development management, emphasizing the importance of reducing ecological risks and enhancing ecosystem services for sustainable development. This research not only advances our understanding of the complex interplay between ecological risks and ecosystem services but also provides practical strategies for promoting environmental governance and resilience in urban settings.

(4) The paper by Huang et al. provides in-depth analysis of the economic resilience of Chinese cities, emphasizing the importance of spatial and temporal divergence in the context of external shocks like the COVID-19 pandemic. The authors construct a robust system of urban economic resilience indicators and employ advanced methodologies such as the two-stage nested Thiel index, spatial kernel density estimation, and geographic detector to measure and analyze the spatial variation, dynamic evolution, and driving factors of economic resilience. The study's findings offer valuable insights into the spatial and temporal characteristics of economic resilience in Chinese cities, contributing significantly to the literature on environmental governance and resilient cities. The paper underscores the need for targeted strategies to enhance urban economic resilience, thereby promoting sustainable economic development and resilience in cities.

(5) The study of Zhang et al. presents a comprehensive model for allocating ecological compensation funds in the Yellow River Basin, a critical ecological barrier and economic development area in China. The model is designed to balance ecological protection and sustainable development, taking into account both the creation of ecological value and the shared socioeconomic development of the region. The authors' approach, which combines pre-allocation based on ecological benefits with optimal allocation based on socioeconomic factors, offers a novel and practical solution to the challenge of achieving environmental sustainability and economic prosperity in the context of basin-wide ecological compensation.

(6) The paper of Guo et al. provides a comprehensive analysis of the energy-consuming right trading policy in China and its impact on the efficiency of urban green development. The study's innovative approach to examining the policy's effects at the macro, meso, and micro levels offers a nuanced understanding of its implications. The authors' use of the Data Envelopment Analysis (DEA) method and the Difference in Differences (DID) model adds robustness to their findings. The paper contributes significantly to the literature on environmental governance by highlighting the role of market mechanisms in promoting green development. Furthermore, it underscores the importance of policy interventions in fostering resilient cities by facilitating a balance between economic growth and environmental sustainability.

(7) The review paper "*Progress and prospect of ecological risks of land use change*" by Cao and Song makes a significant contribution to the field of environmental governance and resilient cities. It provides a comprehensive bibliometric analysis of the ecological risks associated with land use change, a Research Topic of increasing importance in the context of urban development and environmental sustainability. The paper not only presents a detailed analysis of the existing literature but also identifies key trends and future research directions. This work is particularly valuable for its use of quantitative methods to process and interpret a vast amount of data, offering a macroscopic view of the research landscape. The authors' focus on the interaction between natural factors and human activities in regional ecological environments is especially relevant for studies on resilient cities, as it highlights the need for sustainable land use practices and effective environmental governance.

In conclusion, this Research Topic underscores the interdisciplinary nature of resilient cities and emphasizes the role of governance in ensuring this resilience. The contributions provide both specific insights and overarching methodologies that can inform urban policy and planning. As the world grapples with mounting environmental challenges, it is the collective hope that this Research Topic will spur further inquiries and proactive steps towards the creation of resilient cities.

Author contributions

CS: Writing–original draft, Writing–review and editing.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.