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Editorial: Sustainable transition for urban housing and community

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Editorial on the Research Topic Sustainable transition for urban housing and community

Urban sustainability is a pressing challenge that intertwines energy efficiency, social equity, technological innovation, and community involvement. With the growing global emphasis on reducing carbon footprints and addressing climate change, the need for sustainable urban housing and communities has become increasingly critical. This Research Topic, “*Sustainable Transition for Urban Housing and Community*,” brings together a Research Topic of research that examines the multifaceted issues surrounding sustainable development in urban contexts. By analyzing the interplay of energy consumption, governance, technological innovation, and digital transformation, the articles in this Research Topic present a holistic view of how urban sustainability can be achieved.

The first paper, written by [Qian et al.](#), introduces the conceptual framework for understanding the integration of the digital economy and rural revitalization. Using data from the Yangtze River Delta, this study develops a coupling coordination model to assess the relationship between digital economic development and rural revitalization. The research highlights the positive trend of coordination from 2013 to 2020, demonstrating how the digital economy is transforming rural areas. However, the study also identifies digital industry and industrial prosperity as key barriers, offering insight into how urban and rural areas can collaborate in the context of a broader sustainable transition.

Building on this theme of integration, the next paper by [Tang and Chen](#) focuses on energy consumption patterns in urban and rural households. This study reveals the critical role of indirect energy consumption, particularly in housing, and emphasizes the evolving shift from coal to electricity and natural gas. The stark differences in energy consumption trends between urban and rural areas, as well as the ongoing transition towards more sustainable energy use, underline the importance of targeted energy policies that address specific regional and sectoral challenges. Together, these two studies set the stage for understanding the role of systemic integration between digital technology, rural development, and energy sustainability.

From the broader macro-level of rural and energy transitions, the Research Topic moves towards understanding the regional impacts of urban management on innovation, as explored by [Xi](#). By employing advanced econometric models and the Luenberger index methodology, this paper investigates how urban management strategies influence regional innovation efficiency in China’s manufacturing sector. The findings suggest that urban management plays a pivotal role in shaping the innovation landscape, with disparities in efficiency across China’s regions. This highlights the need for better governance frameworks that can boost innovation, particularly in central and western China. As urban management

is often a key determinant in sustainable transitions, this paper offers important policy implications for fostering innovation in urban and industrial sectors.

The role of governance is further explored in Li's paper, and the paper addresses the governance of public spaces within urban communities and provides a deeper understanding of how resident engagement and trust can resolve collective action dilemmas. By analyzing survey data from over 300 residents, Li's research points to the significance of democratic consultation, effective property management, and community participation in enhancing governance efficiency. This study is pivotal in connecting the social aspects of sustainability with urban management, as it reveals how community-driven approaches can create more effective and inclusive governance structures for public spaces. As urban housing and community sustainability cannot be separated from social factors, this study adds a vital dimension to our understanding of how communities can be empowered to take ownership of sustainability challenges.

While governance and community engagement are essential, technological advancements play an equally critical role in achieving sustainable urban transitions. Alhamad et al. explore how national policies such as Saudi Arabia's Vision 2030 drive technological and economic changes in the energy sector. By analyzing the energy landscape of the Hail region, the paper identifies key technological innovations and economic reforms that have fostered improvements in energy efficiency and sustainability. The research demonstrates how top-down national policies can significantly impact regional sustainability efforts, particularly in developing regions like the Hail region, which benefits from initiatives aimed at increasing competitiveness and energy project management efficiency. This study contributes to the understanding of how macro-level policies can drive local-level sustainability.

The final paper in this Research Topic, written by Al-Saidi and Zaidan, provides a critical perspective on the development of smart cities in the Gulf Cooperation Council (GCC) region. The authors critique the traditional top-down approach to urban planning, arguing for a shift towards more localized, community-driven approaches in smart city initiatives. By examining case studies from the GCC, this paper reveals the limitations of central urban planning and advocates for greater community involvement in the design and implementation of smart city projects. The study emphasizes that local governments and stakeholders must engage more actively in participatory planning processes to achieve the desired sustainability outcomes. As cities around the world increasingly adopt smart technologies, this paper provides crucial insights into how these technologies can be harnessed for sustainable urban growth in diverse sociopolitical contexts.

In summary, the articles in this Research Topic offer a comprehensive overview of the challenges and opportunities in

achieving sustainable transitions for urban housing and communities. From digital economy integration and energy consumption patterns to urban management, governance, and smart city development, this Research Topic presents a multifaceted approach to urban sustainability. The research underscores the importance of interdisciplinary collaboration, combining technological innovation, governance reform, and community participation to create sustainable urban environments. As we move towards a more sustainable future, the insights provided in these studies will be invaluable for policymakers, researchers, and practitioners working in the fields of urban planning, energy efficiency, and community development.

We hope this Research Topic will contribute to the growing body of knowledge on urban sustainability and inspire further research that bridges the gap between policy, technology, and community-driven solutions.

Author contributions

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