

Innovation Beyond the Frontier: Alternative Approaches for Understanding Regional Innovation

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Innovation is widely recognized as a central driver of local and regional development, shaping economic growth, structural transformation, and long-term territorial resilience. Regions differ markedly in their innovation capacities, not simply due to variations in R&D investment and human capital, but also due to various institutional arrangements, place-based assets, and their capacities to valorise these resources. Understanding how innovation emerges, diffuses, and translates into economic and social outcomes is crucial for addressing persistent spatial inequalities across Europe and beyond, particularly in lagging-behind regions. At the same time, innovation processes are increasingly heterogeneous, with a significant share of innovation taking forms embedded in traditional industries, services, and small and medium-sized businesses, aside from cutting-edge technological breakthroughs concentrated in urban high-tech clusters. These forms of innovation are often deeply rooted in local contexts and play a crucial role in sustaining employment, competitiveness, and cohesion in secondary cities, rural areas, and peripheral regions. Therefore, one of the main challenges for regional innovation research and the creation of successful, inclusive, and location-sensitive innovation policies is capturing this diversity.

Regional innovation measurement is constrained by a persistent metric bias, as the reliance on patent data tends to under-represent innovation in service-oriented, traditional, and peripheral regions. Although patents provide standardized and information-rich data, they exhibit sectoral and firm-size biases, favoring high-technology industries and large firms (Morales et al., 2024). Consequently, patent-based indicators capture radical technological invention within high-tech clusters but fail to reflect the incremental, non-technological, and market-oriented innovation typical of traditional sectors and small and medium-sized enterprises (Abdin et al., 2024; Kleinknecht et al. 2002; OECD/Eurostat, 2018).

To overcome these limitations, this special session proposes the use of non-traditional innovation proxies, such as trademarks, design rights, and collective assets, to rethink how innovation is measured, where it occurs, and who benefits from it (Lee, 2024). Trademarks capture soft innovation, market entry, and entrepreneurial activity that are often missed by patent-based indicators, particularly in secondary cities and peripheral regions (Castaldi, 2024). Design rights further reveal aesthetic innovation and non-R&D-driven knowledge recombination that underpin competitiveness in mature and creative industries (Corradini & Karoglu, 2023). Together, these measures shift analytical attention from frontier technologies toward the diffusion, adaptation, and commercialization of innovation across a broader range of firms and places. The inclusion of collective assets extends this perspective by foregrounding territorial capital and shared, place-based value creation (Castaldi et al. 2025).

This special session encourages contributions that both critically engage with patent data and creatively recombine it with non-traditional metrics. This integrated approach promises a more comprehensive and territorially sensitive understanding of innovation, better suited to addressing the challenges of inclusive and sustainable regional development. The session welcomes conceptual, methodological, and empirical contributions that investigate these alternative metrics and more, and their implications for more inclusive and policy-relevant regional innovation frameworks.

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