MOBI-TWIN

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Spatial mobility and the twin transition: Understanding the drivers of change in Europe's regions

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Key Messages

- **Europe's simultaneous digital and green transition is transforming how people live, work, and move.** These processes are fundamentally reshaping regional attractiveness and altering the geography of opportunity across the continent.

- **Regions lagging in green and digital readiness face dual disadvantages: population loss and demographic aging.** Without intervention, these areas experience a cumulative decline, while attractive hubs continue to gain talent and boost their innovation capacity.

- **Mobility policies must be integrated into transition governance and tailored to different mobility types to unlock positive economic feedback loops.** Strategically targeting the specific drivers of short-term, long-term, and circular mobility can unlock positive economic feedback loops, turning temporary inflows into long-term settlements.

- **While economic motivations remain strong, green factors significantly increase intentions to move to a region.** People seem to appreciate regions offering better environmental quality and green infrastructure, and visible progress in the green transition.

Background & Context

The **twin transition** is a European mandate affecting political decisions and the conditions under which individuals and firms operate. These processes are reshaping regional attractiveness, altering the geography of opportunity, and redefining what it means for a region to thrive in an interconnected Europe.

The **MOBI-TWIN project** investigates how these green and digital transitions influence spatial mobility—the movements of people across regions for work, study, or lifestyle reasons—and how these dynamics affect regional resilience and cohesion. By **mapping the main forms and drivers of mobility**, empirically assessing green and digital factors, and linking them to regional attractiveness, the project provides a vital knowledge base for the European Commission and regional authorities **to design evidence-based, place-sensitive policies.**

> Mobility flows increasingly reflect differences in regional transition readiness, green lagging and digitally weak regions face both out-flows and demographic ageing.

MOBI-TWIN Evidence

MOBI-TWIN conceptualizes spatial mobility across three main categories: **long-term mobility** (permanent or semi-permanent relocation), **short-term mobility** (temporary stays of 3-12 months, including digital nomads), and **circular mobility** (repeated movements like weekly commuting or multilocal living). Mobility intentions are shaped by a combination of socio-economic, digital and green factors. MOBI-TWIN links these factors to interregional mobility flows, showing how systemic transformations accelerate new mobility patterns and intensify disparities between "sending" and "receiving" regions.

Using econometric analysis and individual data from the MOBI-TWIN survey, the project explored how digital and green factors shape mobility intentions for inter-regional (im)mobility. Key findings suggest:

Digital vs. Green Factors:
Digital factors (e.g., fast broadband, digital jobs, and telework readiness) enable mobility, though economic motivations generally remain stronger overall. However, green factors significantly affect mobility intentions; people are more likely to move to regions with cleaner air and green infrastructure, while regions with high greenhouse gas emissions show lower in-migration intentions. Regions with active circular-economy employment and low emissions can potentially attract new residents, whereas those with high greenhouse-gas emissions,

poor environmental quality, or fossil-fuel dependence show lower in-migration intentions and risk depopulation.

Demographic Differences: Mobility decisions are highly heterogeneous. Women are more responsive to green and lifestyle factors, while men react more to digital infrastructure and job opportunities. Younger cohorts prioritise education, innovation, and culture; older groups emphasize green factors and social stability. Furthermore, minority groups (ethnic, religious, LGBTQ+) show a preference for open, inclusive, and environmentally responsible regions.

Persistent Barriers: Despite strong moving intentions, legal and administrative barriers continue to hinder mobility. Issues such as language policies, recognition of qualifications, and access to housing remain persistent obstacles to movement.

Drawing on these theoretical insights and empirical evidence, the project mapped nine distinct mobility flows across Europe, utilizing the MOBI-TWIN integrated dataset at the NUTS2 regional level. The key results indicate:

Diversification of Mobility Forms: Post-COVID-19 patterns highlight an increase in hybrid and temporary mobility. This diversification includes a rise in multilocal living, long-distance commuting, and seasonal work.

Regional Imbalances & Emerging Attractors: Persistent core-periphery imbalances remain a reality, with major urban and inno-vation hubs in Northern and Western Europe continuing to attract most inflows, while peripheral and rural areas remain net senders. Nevertheless, “new attractors” are emerging: regions boasting high green readiness and strong digital infrastructure are beginning to attract skilled populations, even if they are not the largest economies.

Circular Feedbacks & Left-Behindness: Evidence shows that mobility both reflects and reinforces regional trajectories through circular feedbacks. Attractive regions gain population and talent, which further boosts their innovation capacity. Conversely, mobility flows increasingly reflect differences in transition readiness; green lagging and digitally weak regions face out-flows and demographic ageing, leading to a cumulative decline.

“Regions with high green readiness and strong digital infrastructure, not necessarily the largest economies, are beginning to attract skilled populations.”

Policy Recommendations

1. Reframe mobility as a transition governance challenge. Mobility is not a side effect of economic change; it is a core mechanism shaping the geography of Europe. Policymakers should integrate spatial mobility indicators into core EU policy frameworks, such as Cohesion Policy, Smart Specialisation, and Just Transition Mechanism, as well as other national/regional policies such as language policies.

2. Explore the green and digital roots of interregional (im)mobility. Regions with low digital infrastructures and green vulnerability face both population loss and transition lags. It is essential to minimise vulnerabilities and support opportunities related to the green transition: prioritise green infrastructure, renewable energy, and digital connectivity investments in regions with persistent out-migration under the European Regional Development Fund (ERDF) and Recovery and Resilience Facility (RRF). Moreover, there is a need to support local circular-economy initiatives that can create place-based employment and improve green attitudes.

3. Tailor policies to the distinct drivers of different mobility types. Different forms of mobility (short-term, long-term, circular) are influenced by different factors and require differentiated interventions. Designing policies that strategically target the specific drivers of each mobility type can unlock positive circular feedback effects: initial

inflows driven by short-term opportunities can gradually evolve into longer-term settlement, increasing labour market participation and strengthening the economic vitality of the region. Tailoring mobility strategies in this way enables policymakers to make more effective, opportunity-sensitive decisions with tangible long-term impact.

4. Integrate foresight and modelling into regional planning. Regional authorities should be encouraged to adopt foresight methods in strategy design, particularly within Smart Specialisation (S3) and Mission-oriented programmes. MOBI-TWIN's scenario-building and agent-based modelling tools can help anticipate the effects of transitions on interregional mobility.

5. Build a European evidence infrastructure for attractive-ness and mobility. A European Observatory on Regional Mobility and Attractiveness should be established as a shared plat-form for continuous assess-ment, and coherent, data-driven policymaking. This would enable the integration of datasets across Eurostat and European Commission offices (DG REGIO, DG EMPL, DG CLIMA, DG CONNECT), supporting more coordinated monitoring, evaluation, and impact assessment of the different forms of regional mobility and the green and digital transitions.

6. Strengthen participatory governance through RRI. Inclusive regional policy-making must be guided by Responsible Research and Innovation (RRI). Institutiona-lizing participatory foresight processes that actively engage citizens, local authorities and experts in co-designing transition strategies ensures that policies reflect local needs and collective aspirations, improve evidence uptake and maintain societal legitimacy.

Conclusions

The first phases of the **MOBI-TWIN project** showed that spatial mobility both reflects and shapes these transitions. **Regions with the foresight to align traditional drivers with digital and green transitions will be those that retain and attract people, ensuring resilience in the face of demographic and technological change.** For the European Commission, the challenge is to translate this understanding into integrated policies that connect interregional mobility management, transition funding, and regional foresight – ensuring that no region is left behind in the age of the twin transition.

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