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Title: Patterns of Innovation across EU

The EU is investing millions of euros into improving competitiveness. One of the EU's key priorities for boosting competitiveness is strengthening its innovation. This has translated to a large number of ongoing programs that aim to connect different regions in an attempt to trigger inter-regional collaboration and the EU's overall innovation performance.

Balland & Boschma (2021) have developed a framework to support the partnership between regions. Their framework is based on relatedness and complexity. Theoretically, it introduces the idea that both relatedness and unrelatedness between the technologies in breakthrough inventions and the regional portfolio of technologies can positively influence the appearance of these breakthroughs, but especially relatedness. This framework arrives at the best possible partners (for example technology complementarities).

This framework has shown a "wicked problem for innovation policy", as noted by Pinheiro et al. 2025, that the strategy needed to improve the innovativeness of the European knowledge system might disproportionately benefit regions that are already developed and foster disparities. (Pinheiro et al., 2025)

This brings us to the question of the patterns of innovation in the EU.

Firstly, how are the potential collaborations (as found by Balland & Boschma) perpetuating patterns of divergence across regions? **What pattern of innovation is created by the potential collaborations (Balland & Boschma, 2021) framework?** By using different indicators like GDP and/or institutional readiness we can better assess if the potential collaborations are creating a specific pattern of innovation across EU regions. Secondly, **to what extent is the Balland & Boschma framework overlapping with reality?** By checking the existing programs across regions (ex. Interreg and Horizon) we assess what is happening in reality.

Answering these two questions will allow for an understanding of not only the EU collaboration patterns, but also where the EU stands in relation to the EU cohesion policy goals.