TRACK 6: R&D Networks and Geography: Novel Empirical and Analytical Approaches in a Policy Context

Session Proposers:

Thomas Scherngell
thomas.scherngell@ait.ac.at, AIT, Center for Innovation Systems & Policy

Martina Dünser
martina.duenser@ait.ac.at, AIT, Center for Innovation Systems & Policy

Description:

The focus of the proposed research track will be on the geography of networks and R&D collaborations in a STI policy context. Special emphasis is placed on the spatial dimension of policy induced interactions between organisations performing joint R&D, for instance in the form of collaborative research projects. Such interactions have attracted a burst of attention in the last decade, both in the scientific study of the networks, as well as increasingly in the policy sector. Specifically the study of the spatial dimension of R&D networks has meanwhile become an essential and fascinating domain for advanced research on the spatial and temporal evolution of innovation systems at different spatial scales (see, e.g., Scherngell 2013). Also from a policy perspective, the analysis of the spatial dimension of R&D networks is of high relevance, for instance EU level, considering the policy goal that networks of actors performing joint R&D should span the territory of the EU, and, by this, affect the circulation of knowledge and researchers in a Europe-wide system of innovation (see Hoekman and Frenken 2013).

However, specifically in a policy context, empirical works that have been conducted up to now often remain unsatisfactory. This is mainly related to the analytical and methodological approaches used, as well as a lack of systematic and clean data on R&D networks. One crucial aspect in this context is the difficulty to isolate policy effects (i.e. additionalities) on the development of such networks over geographical space and time, and to grasp impacts of policy induced R&D networks on – generally speaking – the socio-economic development of organization, regions or countries in a more systematic way. On top of the research agenda in this context is, for instance, the investigation of structural and dynamic impacts of policy induced R&D networks on knowledge creation and inventive behaviors of innovating actors, and the innovative capability of regions, countries or the EU as a whole.

Recently, scholars have started to combine network analytical approaches with spatial econometrics in analyzing the geography of policy induced R&D networks, in comparison to co-publication and co-patent networks (see Varga et al. 2014, Wanzenböck et al. 2014). The integration of spatial analysis methods in combination of network analysis seems particularly promising in this respect, as is the complementary usage of simulation techniques to e.g. frame different policy scenarios. Concerning the empirical side, it is worth noting that novel data infrastructures have been established recently, e.g. under the umbrella of the RISIS infrastructure (risis.eu), collecting and systematizing data for science, innovation and policy studies. These new data infrastructures show great potential for capturing and modelling impacts of policy induced R&D networks in a more systematic way, but they have only hardly been exploited up to now.

Against this background, this track will shift attention to novel methodological approaches and empirical strategies for the analysis of policy induced R&D networks, particularly emphasizing the relevance of their geographical dimension when capturing policy impacts. By novel empirical and analytical approaches, we refer to both, models and new data infrastructures that are able to capture R&D networks. By this, the track is intended to bring together a selection of contributions providing novel empirical insights into the geographical dynamics of policy induced networks and R&D collaborations, in particular across Europe by focusing on e.g. networks funded under the European Framework Programmes (FP).

The contributions to the track will employ new, systematic data sources, e.g. by drawing on information given in new datasets provided by RISIS. Further, innovative methodologies will be proposed to capture policy impacts, ranging from cutting-edge spatial analysis and spatial econometric techniques, network modelling techniques as well as simulation, such as agent-based modelling (ABM) approaches. In that sense, it welcomes contributions on analytic advances and methodology, on structure and spatial characteristics of policy induced R&D networks, and on impacts of R&D networks on knowledge creation and innovation activities. The latter may be specifically contextualized in contributions focusing on policy impacts in the context of Key Enabling Technologies (KET) or Societal Grand Challenges (SGC) as major cornerstones of the current EU STI policy.

References:

Hoekman, J., and Frenken, K. (2013). Proximity and stratification in European scientific research collaboration networks: a policy perspective. In Scherngell, T. (2013) The Geography of Networks and R&D Collaborations (pp. 263-277). Springer International Publishing.

Scherngell, T. (ed.) (2013): The Geography of Networks and R&D Collaborations. Advances in Spatial Science Series. Springer-Physica Verlag, Berlin-Heidelberg-New York

Varga A, Pontikakis D, Chorafakis G (2014) Metropolitan Edison and cosmopolitan Pasteur? Agglomeration and interregional research network effects on European R&D productivity. Journal of Economic Geography 14:229–26

Wanzenböck I, Scherngell T, Brenner T (2014) Embeddedness of regions in European knowledge networks. A comparative analysis of inter-regional R&D collaborations, co-patents and copublications. The Annals of Regional Science 53:337–368