

# New insights on Regional Innovation Policies

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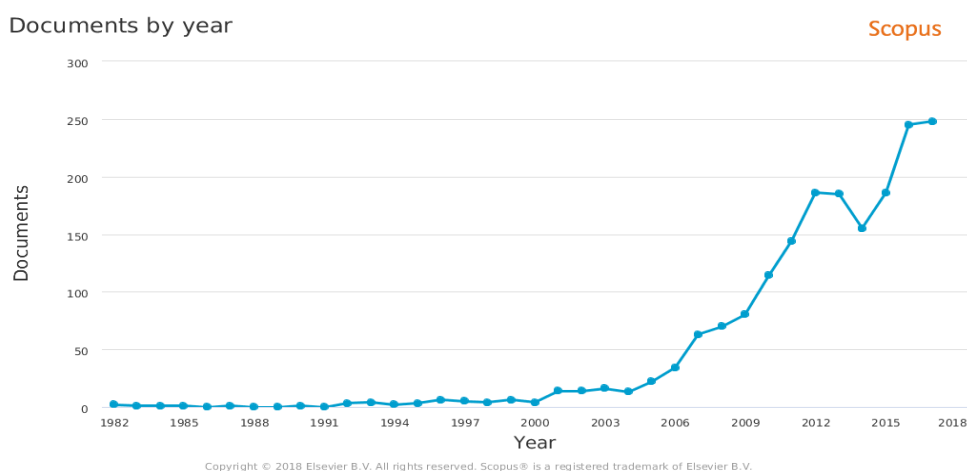
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## Introduction

The interest in regional innovation policies has progressively increased during the last two decades. We can actually talk about an emerging sub-field within regional innovation studies. As shown in figure 1, the term “regional innovation policy” was barely used in academic papers before year 2000. Nevertheless, since the mid-2000s the growth in the use of this term has been particularly relevant and continuous. The interest in the field is mostly European, since more than 90% of these documents have been published in European countries.

Figure 1. Frequency of the use of the term “regional innovation policy” in scientific papers



Source: Own-elaboration based on SCOPUS

## **From regional innovation systems to regional innovation policies**

Studies on regional innovation policies are narrowly linked to those on regional innovation systems (RIS) (Cooke 1992; Cooke, Uranga, and Etxebarria 1997; Asheim and Isaksen 1997; Howells 1999; Asheim and Gertler 2005). The RIS approach emerged in the 90s linked to both the national innovation systems (NIS) literature and contemporary contributions on economic geography and cluster theory. The NIS approach underlines the distinctive character of the innovation process across nations, regions and sectors, due to diverse technological and institutional trajectories (Lundvall 1992; Edquist 1997). Following the post-Schumpeterian perspective of the evolutionary school (Nelson and Winter 1982; Dosi and Nelson 1994) the dynamic and path-dependent nature of economic change is stressed, which contributes to explaining why each sector or territory follows different innovation trajectories, shaping different systems of innovation. Besides, based on the so-called “interactive learning theories” (Lundvall and Johnson 1994), innovation is understood as a ubiquitous phenomenon which is the result of multiple and continuous learning processes where multiple agents participate. Likewise, NIS and RIS are formed by multiple actors (firms, HEIs, technological centres) interacting and giving rise to learning processes and innovations.

On the other hand, since the 80s several schools from the economic geography discipline also emphasised the importance of innovation for regions and territories competitiveness. This emphasis came from diverse conceptualizations like the new industrial districts school (Becattini 1990), the flexible production systems approach (Scott 1988; Storper and Harrison 1991) or the learning region approach (Asheim 1996; Morgan 1997). All these perspectives can be labelled as territorial or place-based, in the

sense that they highlight the distinctive character of the factors influencing regional development (institutions, technologies, external connections). The place-based substratum is also well present in the cluster theory, developed particularly by Porter, which has also been influencing both the RIS approach and regional innovation policies (Porter 2000; Cooke 2001). From these perspectives, each territory does not only show a particular economic trajectory, but also demands specific and place-based policies.

Like the NIS approach, the RIS theoretical framework bases its rationale for policy intervention on the existence of system failure. Thus, unlike neoclassical economics the evolutionary approach is not only focused on market failures in order to underpin S&T policies as a linear view of innovation. They rather focused on the need to address systemic failures based on the understanding that learning processes needed for innovation are the result of multiple interactions in systems where different agents and institutions are involved (Metcalf and Georghiou 1997). Such interactions, as for instance between universities and industries, are not always fluid and sometimes they do not even exist. When this happens a policy intervention is needed.

Therefore, the systemic approach leads to other kinds of innovation policies, which are different and more complex. There is a broad range of different instruments that attempt to strength the interactions and support the creation and expansion of innovative enterprises. Among them, it should be highlighted support infrastructures for innovation, such as technological parks, technological centres; or the provision of services by innovation centres or agencies for innovation. Another relevant issue is to foster cooperation among the different elements and players involved in innovation, as well as the articulation and coordination of the IS. In this sense, the structures that encourage the cooperation, mainly between enterprises and universities, are useful tools

(collaborative projects, researchers mobility, etc). The interactions with the financing system are also relevant.

### **Smart specialization strategies and path transformation**

Most recently, the dominant paradigm for regional innovation policies (at least in Europe) has been the so-called smart specialization approach. As pointed by Bjorn Asheim later in this issue, the smart specialization approach is coherent with the RIS approach and somehow a logical extension of it. In fact, it can be considered a natural link between regional development policies and innovation policies.

According to Foray (2014, p. 1) the concept of smart specialization refers to “the capacity of an economic system (a region for example) to generate new specialities through the discovery of new domains of opportunity and the local concentration and agglomeration of resources and competences in these domains”. Meanwhile S3 refer to those actions and measures (policies) that promote this kind of processes. In this line McCann (2015, p. 175) points that “the smart specialization logic argues that in order to foster innovation and growth regions should aim to prioritise those activities fostering and enhancing entrepreneurial search initiatives in activities which are aimed at technologically diversifying those activities which are both highly embedded within a region and also highly connected to other regions”.

Although not initially designed as a regional policy, Smart Specialisation became a key pillar for the Cohesion Policy of the European Commission for the period 2014-2020. According to McCann (2015), S3 rationale fitted very well with the EU cohesion policy due to two reasons. Firstly, because it provided a policy prioritization framework in line with Europe 2020 strategy. Secondly, because it followed a “place-based” logic, like the Cohesion Policy did. As mentioned above, the place-based

approach assumes that policy priorities should vary between different types of regions. It also suggests that regional policies should build on local capabilities and promote innovative strategies, based on local and non-local actors and knowledge (Rodrik 2005; Barca, McCann, and Rodríguez-Pose, 2012). This is what smart specialization strategies do when applying a bottom-up approach like the entrepreneurial discovery process.

S3 is mostly about regional structural change and path development and transformation (Foray 2014). Scholars from the so-called evolutionary economic geography paradigm (Boschma & Lambooy 1999; Neffke, Henning, & Boschma 2011), has put much emphasis on how new industrial paths develop in regions as this is a major issue for explaining regional inequalities and for the design of innovation policies. Most of these studies point out that the location of emerging industries is not a random process but existing industrial paths explain the new paths. For this reason one of the popular concepts within this field refers to “related variety/diversification” (Frenken, Van Oort, and Verburg 2007; Boschma and Iammarino 2009). Related variety links knowledge spillovers from existing sectors to new industrial paths and regional development. From the regional innovation policy perspective studies on related variety are a very useful instrument in order to prioritize industries or technologies with high potential. Most recently some authors have recognised the relevance of this perspective but also criticized it saying that is too narrow as it is too much focused on firms behaviour (forgetting other actors and institutions), and on quantitative methods (Hassink, Isaksen and Trippel 2018).

### **The importance (and disregarding) of the policy-making process**

The S3 approach stresses the importance of a coherent design of regional strategies,

based on the active participation of key stakeholders. This is quite a novelty in regard to regional innovation policies because, as pointed by Uyarra (2010), although the innovation literature has discussed in depth the role and rationality of innovation policies it has generally disregarded the policy-making process itself. Uyarra (2010) criticizes that Evolutionary scholars are usually biased towards normative analysis (what policy makers ought to do) disregarding the positive analysis (i.e. what policy makers actually do). In particular, as pointed by Uyarra (2010, p. 132) “when formulating policies, regions need not only take the knowledge and institutional base of the region as starting point, but also consider existing policy mixes and past policy history, for they will enable or constrain new policy goals”. In this issue we try to add to this aspect by including some papers which are focused on the policy-making process of regional innovation policies.

### **This issue**

The present issue stands on several papers presented at the 12th Conference on Regional Innovation Policies, which took place at Santiago de Compostela, on October 2017.

This conference, which started its journey at Porto in 2006 initiated by Mario Rui Silva (with Bjørn Asheim and Phil Cooke as the first key note speakers), has become the key event on regional innovation policies in Europe and it is probably the main factor explaining the increasing interest for this subject. Besides, some of the contributions for the issue have benefited from the support of the Jean Monnet project “EURIPER” (EU Regional and Innovation Policies and Peripheral Regions). This project, funded by the European Commission, is coordinated by the University of Santiago de Compostela and counts on the participation of researchers from Norway, Italy, Poland, Germany and

Denmark.

This special issue consists of eight papers. Each of them approaches a particular aspect related to regional innovation policies. Popular concepts and topics from the current regional innovation policies literature, like path-development, knowledge bases, smart-specialization strategies, regional governance, policy learning, public procurement for innovation or interpretative policy analysis, are all applied in the following papers.

Bjorn Asheim presents a conceptual framework for supporting the implementation of smart specialization strategies (S3), based on the regional innovation system approach. Moreover, the author discusses different types of new path development, a process which can be enhanced through S3 implementation. In particular, the author argues that policy makers should take into account the different forms of industrial transformation, including the most radical ones (like deep path diversification and path creation), as they can bring higher benefits to the regions in a long term perspective. Asheim applies the analytical framework to the Mazovia region in Poland and emphasizes the importance of the “entrepreneurial discovery” process as a tool to achieve economic diversification. Such process might be relevant also for building a regional innovation system, particularly at less developed regions in the EU.

Jiří Blažek and Vojtěch Kadlec analyse the socioeconomic and innovation performance of EU regions depending on the different knowledge bases and the R&D structure, as well as their relationships. They use the regional innovation system approach and in particular the distinction between the knowledge-generation and the knowledge-exploitation subsystems. The knowledge base is classified into synthetic, analytic and symbolic. The R&D structure refers to the distribution of R&D among three segments: private sector, public sector and higher education. The paper suggests

that the regional differences in the knowledge base and the R&D structure are interrelated. Overall, the advanced regions tend to present less relevance of synthetic knowledge base and the predominance of private R&D or a balanced relevance of private and public R&D. They also link the level of development of a concrete RIS to the different modes of integration in the global economy. They conclude that policy interventions should target the processes of knowledge generation and capability development in regional industries.

Arne Isaksen, Stig-Erik Jakobsen, Rune Njøs and Roger Normann discuss the mechanisms and policies that stimulate economic restructuring. The focal point of their paper is that new path development requires combined innovation actions at both, the firm level and the system level. They define system level agency as the development and reorganisation of regional innovation systems. Firm level agency refers to the starting of new innovative firms or new activities in existing firms with the potential to create new growth paths. According to their insights, system level agency is particularly important for path diversification and creation as well as for regions with thin and specialized knowledge and industrial structure. The authors illustrate their analytical framework through four concrete cases of path development from Norway, each of them representing a different type of path development (path-extension, path upgrading, path diversification and path creation). They conclude that each type implies a distinctive role of firm level agency and system level agency as well as particular lessons to be taken into account by policy-makers.

George Papamichail, Alessandro Rosiello and David Wield discuss the issue of implementing S3 strategies in less developed regions. The authors underline the importance of capacity building barriers, particularly the ones referring to firms lack of absorptive capacity and to inefficiencies in building institutional networking. Based on

the cases of two Greek regions, Crete and C. Macedonia, the authors identify a limited ability of local firms to exploit scientific knowledge, which can hinder the achievement of S3 objectives. Besides, the absence of a culture of collaboration at an institutional level, the different understanding of strategic networking across key S3 actors, and the lack of trust-based relationships, compose three central barriers to S3 implementation in this kind of regions.

Dieter Rehfeld and Judith Terstriep discuss regional governance of innovation policies based on the experiences from North Rhine-Westphalia during the last 25 years. They aim at extracting lessons to be applied for the implementation of S3, under the premise that previous paths and routines determine the implementation of new policies. The authors highlight the importance of professional agencies to manage regional policies, as they act more freely from the rest of the actors (including public administration). They also consider social participation as key for the implementation of innovation policies, such participation should be central and not just an additional element of the triple helix approach.

Manuel González-López analyses the question of how policy learning happens at innovation policies in a multilevel governance framework. Based on the Evolutionary and Policy Learning theoretical background, the author proposes a taxonomy of learning channels in regional innovation policies, which is later applied to the Galician innovation policy case. According to Gonzalez, the findings demonstrate the importance of interactions with other government levels as a major channel for learning in regional innovation policies. Sometimes learning is associated to simple imitation of the national level, as it has been the case of the Galician innovation policy since its emergence. This might lead to questionable results because neither the previous policy-making trajectory nor the region particularities are taken into account. Other times learning is needed

because a new political rationality is imposed by other government levels. This has been the case of S3, which in any case has been useful for enhancing other learning mechanisms like social participation during policy design and implementation.

M<sup>a</sup> Carmen Sánchez-Carreira, María C. Peñate-Valentín and Pedro Varela-Vázquez analyse the relation between public procurement of innovation (PPI) and regional development, using the empirical evidence of Spain at the regional level. PPI is a demand-side innovation policy tool, which has gained relevance in the last decades. The authors indicate that the implementation of this instrument might need special attention in peripheral regions, due to their institutional thinness and their lack of technological capabilities. Based on a study made for the health sector in Galicia, where a pioneer experience on public procurement for innovation is being developed, the authors point out the importance of coordination between supply and demand-side policies in order to this instrument being successful. Their results also suggest that the effects of PPI on regional development depend on features such as the productive structure or the innovation capabilities of the region.

Finally, from a conceptual viewpoint, Ainhoa Arrona and Jon Mikel Zabala reflect on the need to incorporate alternative perspectives coming from the political sciences in order to study and practice regional innovation policies. The authors highlight the complexity of policy processes, something not usually taken into account by the analytical approaches addressing regional innovation policies. The authors explore the possibility of applying concepts and views from interpretative approaches, well-known in the political science literature. In particular, they explore the relevance of the analysis of narratives, frames and meaning, the practice perspective and “dialogical approaches to meanings” or collaborative approaches to policy analysis.

## References

- Asheim, B. T. (1996). Industrial districts as 'learning regions': a condition for prosperity. *European Planning Studies*, 4(4), 379–400.
- Asheim, B. T., and M. S. Gertler (2005). The geography of innovation: regional innovation systems. In *The Oxford handbook of innovation*, edited by J. Fagerberg, D. Mowery, and R. Nelson, 291–317. Oxford: Oxford University Press.
- Asheim, B. T., and A. Isaksen (1997). Location, agglomeration and innovation: towards regional innovation systems in Norway? *European Planning Studies*, 5(3), 299–330.
- Barca, F., P. McCann, and A. Rodríguez-Pose (2012). The case for regional development intervention: place-based versus place-neutral approaches. *Journal of Regional Science*, 52(1), 134–152.
- Becattini, G. (1990). The Marshallian industrial district as a socio-economic notion. In *Industrial districts and inter-firm co-operation in Italy*, edited by F. Pyke, G. Becattini, and W. Sengenberger, 37–51. Geneva: International Labour Organisation.
- Boschma, R. A., and J. G. Lambooy (1999). Evolutionary economics and economic geography. *Journal of Evolutionary Economics*, 9(4), 411–429.
- Boschma, R., and S. Iammarino (2009). Related variety, trade linkages, and regional growth in Italy. *Economic Geography*, 85(3), 289–311.
- Cooke, P. (1992). Regional innovation systems: competitive regulation in the new Europe. *Geoforum*, 23(3), 365–382.
- Cooke, P. (2001). Regional innovation systems, clusters, and the knowledge economy. *Industrial and Corporate Change*, 10(4), 945–974.
- Cooke, P., M. G. Uranga, and G. Etxebarria (1997). Regional innovation systems:

- Institutional and organisational dimensions. *Research Policy*, 26(4–5), 475–491.
- Dosi, G., and R.R. Nelson (1994). An introduction to evolutionary theories in economics. *Journal of Evolutionary Economics*, 4(3), 153–172.
- Edquist, C. (Ed.) (1997). *Systems of Innovation: Technologies, Institutions and Organizations*. London: Pinter.
- Foray, D. (2014). *Smart specialisation: Opportunities and challenges for regional innovation policy*. New York: Routledge.
- Frenken, K., F. Van Oort, and Verburg, T. (2007). Related variety, unrelated variety and regional economic growth. *Regional Studies*, 41(5), 685–697.
- Hassink, R., A. Isaksen, M. Trippel (2018). *Towards a comprehensive understanding of new regional industrial path development*. Papers in Economic Geography and Innovation Studies No. 2018/02.
- Howells, J. (1999). Regional systems of innovation. In *Innovation Policy in a Global Economy*, edited by D. Archibugi, J. Howells, and J. Michie (67–93). Cambridge: Cambridge University Press.
- Lundvall, B.-Å. (1992). *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London: Pinter.
- Lundvall, B.-Å., and B. Johnson (1994). The learning economy. *Journal of Industry Studies*, 1(2), 23–42.
- McCann, P. (2015). *The regional and urban policy of the European Union: Cohesion, results-orientation and smart specialisation*. Cheltenham: Edward Elgar Publishing.
- Metcalf, J. S., and L. Georghiou (1997). *Equilibrium and evolutionary foundations of*

*technology policy*. CRIC Discussion Paper No. 3. Centre for Research on Innovation and Competition, University of Manchester.

Morgan, K. (1997). The learning region: institutions, innovation and regional renewal. *Regional Studies*, 31(5), 491–503.

Neffke, F., M. Henning, M., and R. Boschma (2011). How do regions diversify over time? Industry relatedness and the development of new growth paths in regions. *Economic Geography*, 87(3), 237–265.

Nelson, R. R., and S. G. Winter (1982). *An evolutionary theory of economic change*. Cambridge: Belknap.

Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic Development Quarterly*, 14(1), 15–34. Rodrik, D. 2005. Growth Strategies. In *Handbook of economic growth*, edited by P. Aghion and S. Durlauf, 967-1014. North-Holland: Elsevier.

Scott, A. J. (1988). Flexible production systems and regional development: the rise of new industrial spaces in North America and Western Europe. *International Journal of Urban and Regional Research*, 12(2), 171–186.

Storper, M., and B. Harrison (1991). Flexibility, hierarchy and regional development: the changing structure of industrial production systems and their forms of governance in the 1990s. *Research Policy*, 20(5), 407–422.

Uyarra, E. (2010). What is evolutionary about ‘regional systems of innovation’? Implications for regional policy. *Journal of Evolutionary Economics*, 20(1), 115–137. <https://doi.org/10.1007/s00191-009-0135-y>