Editorial

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1 Introduction

This Special Issue gathers contributions from around the world, covering the important subject of clusters and regional innovation systems. The concepts of the cluster and the regional innovation system have gained much attention from policymakers and academic researchers since the early 1990s, as a promising analytical framework for advancing our understanding of the innovation process and technological change in the regional economy. Their popularity is closely related to the emergence of regionally identifiable nodes or clusters of industrial activity, as well as the surge in regional innovation policies recognising the region as the most appropriate geographical context to sustain innovation-based learning economies.

While a fair number of studies have been undertaken to identify, characterise and sometimes explain the sources and evolution of individual clusters, regional innovation systems and their spatial manifestations, there have thus far been fewer publications striving to draw out general characteristics and definitions, which, in and of themselves could justify widespread policy intervention on learning and innovation. Thus, it seems that the debate over the roles and functions of clusters and regional innovation systems is far from being resolved and more research is required to fully understand their roles and impacts in the learning and innovation processes of private and public organisations. The issue of empirical representation of clusters and regional innovation systems is still among the most discussed in this field of research. There is an ongoing debate on the extent to which clusters and regional innovation systems can be observed and developed in different sectors (low knowledge-intensive versus high knowledge-intensive) and regions (metropolitan regions versus peripheral/rural regions). Last but not the least, an increasing number of studies have begun to question the relationship between spatial clustering of economic activity and the spatiality of knowledge creation in various sorts of interactive learning processes. Few studies as of yet have provided convincing empirical evidence of the relative significance and/or superiority of local over non-local forms of interactive learning.

2 Papers in this Special Issue

This Special Issue is comprised of three different parts. The first part focuses mainly on the theoretical analysis and political aspects of clusters and regional innovation systems.

Cooke argues that entrepreneurship and talent-formation have been understated in the regional innovation systems discourse thus far. In his paper, he categorises regional innovation systems' evolution according to the robustness of these two elements. In his opinion, future regional advantage will very much depend on talent formation and entrepreneurship. In order to obtain a more effective regional innovation policy, *Asheim, Coenen, Moodysson and Vang* discuss three crucial dimensions of regional advantage: specific industrial knowledge, globally distributed knowledge networks and different territorial competence bases. *Boschma and Sotarauta* describe the impressive recovery of the Finnish economy over the last few years from an evolutionary perspective. Although drastic structural change suggests a break with the past, the recovery was rooted in its economic history. Finnish public policy was decisive in turning Finland into a knowledge economy. *Landry, Amara, Lamari and Ouimet* paper shed some light into the coordination mechanisms of interactions between firms operating in innovative environments. With the help of regression models, the authors clearly show the determinants of coordination in clusters. From the political perspective, they state that the management of innovative environments vary from case to case and that policy attempts should be customised to the region's specific needs. *Kébir and Crevoisier* argue that innovative milieus play an important role in the coherence and the competitiveness of production systems. Innovative milieus are seen as creators of collective resources. Innovative milieus take part in the identification and the implementation of resources. More mature and stable production systems appear more effective in the production and reproduction of resources. *Shearmur* answered the central

question of whether same sectors co-locate in different cities. With the help of cluster analysis, he detects sectoral co-location patterns in eight Canadian metropolitan areas.

The second group of papers dealt with empirical studies on individual clusters and regional innovation systems in Canada and Europe.

Adopting a systematic social network analysis *Ouimet, Landry and Amara* find empirical evidence for the relationship between the network position of a firm and its innovativeness. By surveying the Quebec optics and photonics cluster, they demonstrate that connected firms are more innovative and that these firms have links to a large variety of organisations. *Britton's* case study of Toronto's new media industry is based on a firm survey. He is able to show that recent innovations are closely related to the development trajectory of antecedent activities. For a better understanding of clusters, the author points to the need for cluster research to be explicitly concerned with dynamic relationships. *Klein, Tremblay, Fontan, and Guay* describe the success story of the fur industry in Montreal. The physical, accompanied by the organisational, technological and cultural proximity of stakeholders promoted the emergence and exercise of flexible governance structures allowing the Montreal fur industry to innovate and survive in the global market. *Rutherford and Holmes* examine the role of entrepreneurs in the development of the Windsor, Ontario automotive Tool, Die and Mould (TDM) cluster, which has experienced a significant crisis in recent years. As a consequence of new positioning into global production chains, the Windsor TDM cluster underwent a recombination of networks of codified and tacit knowledge, negatively affecting the potential role of entrepreneurs. Using a model of knowledge interactions, *Tödtling and Trippl* analyse knowledge flows in the emerging Vienna biotechnology cluster. They are able to show that each type of knowledge interaction has its own regional scope. *Isaksen* analyses learning and innovation processes in the cluster of electronics firms in a small town (Horten) in Norway. He demonstrates that regional resources have recently become much more important for innovation processes than in the initial phase of cluster development based on national R&D-institutes.

Finally, the third part contains papers that deal with the transformation paths driving regional competitiveness in specific clusters and regional innovation systems.

Revilla Diez and Mildahn discuss the role tertiary institutions play in the establishment of new businesses in a depressed regional innovation system in Northern Germany. Kiel has undergone a dramatic change in its economic structure and hopes to achieve development momentum by making use of the local universities as entrepreneurship incubators. *Doloreux, Dionne and Lapointe* explore non-metropolitan innovation systems and the role of institutions for local innovation processes in a comparative perspective (two regions in Canada, one in France and one in Belgium). The authors demonstrate the significance of historical aspects in recent economic development and that rural, regional innovation systems are also places of innovation. *Cumbers, Leibovitz and MacKinnon* have chosen Scotland as an example for successful adaptation processes in old industrial regions. The authors' approach understands regional development in terms of historical legacies and spatial connections that constrain or facilitate regional success. *Sternberg's* focus lies on the role of the local setting for the creation of new firms. On the basis of data from the European Regional Innovation Survey (ERIS), he shows that new innovative firms are more strongly embedded in a regional context than older firms. *Koschatzky and Lo* discuss the role and the effectiveness of policy action in the promotion of networks and clusters in

East Germany. In the case of Saxony, the authors were able to show that it is possible to initiate networks through public governance. But doubts remain referring to sustainability and economic impact.

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