



EXTENDED ABSTRACT

Title: Research fronts and trends in the scientific literature on local clusters and global value chains (GVCs): A network analysis

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Subject area: S02 –Industrial clusters, dynamism and business strategy

Abstract:

The recent literature dedicated to clusters, industrial districts and other local employment systems increasingly stresses how convenient it is –from the perspective of territorial development and the implementation of RIS3 strategies: *Regional Research and Innovation Strategies for Smart Specialisation*– both to open territories and to connect them with global value chains (GVCs) for the purpose of acquiring different knowledge, renewing the current actors, interconnecting networks and rejuvenating territories, thus favouring the detection of inventions and technologies beyond the cluster and avoiding lock-in through knowledge updating. By way of example, authors like Eisingerich et al. (2010, p. 252) empirically demonstrate in their research that clusters and regions of excellence are characterised by the existence of dense local knowledge and endogenous development networks but simultaneously stand out for being regions open to new knowledge and technologies. In particular –seeing how important it is to understand the need to open clusters and their inclusion in global value chains (GVCs) which allow for the entry of knowledge, the updating of technologies and skills, the renovation of actors and, in short, an improved level of competitiveness in territories as well as in their productive fabric, mainly shaped by SMEs –thus avoiding cluster myopia or lock-in¹ and cognitive inertia through the exploration of new knowledge (Crescenzi et al., 2015; Eisingerich et al., 2010; Giuliani et al., 2014; Hervás-Oliver and Boix-Domènech, 2013; Hervás-Oliver et al., 2015a; Iammarino and McCann, 2013; among others)– the present paper has as its aim to objectively analyse the research on clusters and global

¹ Lock-in or cluster myopia consists in a problem of over-embeddedness, caused by an over-exposure to mainly (or only) the absorption of local knowledge which can prove counterproductive for clusters in the long term (Pouder and St John, 1996; Uzzi, 1997). Many findings support a positive association between embeddedness and performance, but a growing number of studies also point to decreasing benefits of increasing embeddedness levels and others even argue that too high levels of embeddedness lead to over-embeddedness and suboptimal outcomes (Gargiulo and Benassi, 2000; Grabher, 1993; Laursen and Salter, 2006; Masciarelli et al., 2010; Owen-Smith and Powell, 2003; Uzzi, 1997; Uzzi and Spiro, 2005). The consequence, as point out Andersen (2011, p. 70), is that the relation between embeddedness and performance often follows an inverted U-shape: benefits reach a threshold after which over-embeddedness increases inertia and vulnerability (Uzzi, 1996; Uzzi, 1997; Uzzi and Spiro, 2005).



value chains (GVCs) developed in the academic context. Bibliometric methods were used to achieve that aim: in particular, the *bibliographic coupling* technique²—applied to papers on clusters and global value chains (GVCs) recently published in different journals belonging to the areas of *economics, management, business, planning development, urban studies, geography, environmental studies and operations research management science*— along with social network analysis (SNA). Our paper essentially seeks to identify and represent the main *research 'fronts'* which shape the vanguard of knowledge and allow us to know the most important current and future research trends in the areas examined. From our point of view as authors, such an identification not only stems from the need to take stock of the already developed research; in fact, it also gives scholars and researchers a chance to reflect all over again on the excellent opportunity that clusters provide to break down the various activities which shape the aforementioned GVCs into small parts seeking the best fit with the different business agglomerations. In other words, the idea is to try and obtain the best possible resources and advantages in each one of the territories where a firm locates its range of activities. Attention also deserves to be paid to how, within an economic globalisation context, the integration between MNEs and territories—academic literature has mainly adopted the country as unit of analysis for MNE location (Beugelsdijk et al., 2010)³— can help give a response to the problems of endogenous development and cognitive inertia mentioned above.

The 'source-documents' utilized to carry out the present research work were retrieved from the Web of Science™ (WoS) Core Collection (CC).

The WoS CC is composed of six indices provided by Thomson Reuters: the Science Citation Index Expanded (1970–present), the Social Sciences Citation Index (1970–present), the Arts & Humanities Citation Index (1975–present), the Conference Proceedings Citation Index-Science (1990–present), the Conference Proceedings Citation Index-Social Science & Humanities (1990–present), and the Emerging Sources Citation Index (2015–present).

The different “fronts” situated at the forefront of knowledge which permit to reveal the current—and even the future—trends in research with regard to the phenomenon analyzed are described in detail in our research.

The research works of Hervás-Oliver, Albors-Garrigós and Hidalgo (2011), Hervás-Oliver and Boix-Domenech (2013), Hervás-Oliver and Albors-Garrigós (2008), Hervás-Oliver, Albors-Garrigós and Dalmau-Porta (2008), Giuliani, Pietrobelli and Rabellotti (2005) and Nadvi and Halder (2005) about the inclusion of clusters and local employment systems in GVCs—suppliers and buyers within a global value chain offer important external ties for cluster-based producers not only in terms of the distribution of physical goods, but also for knowledge flows and innovation—are integrated in one of the *research 'fronts'* identified in the analysis. In their work *Local clusters in global value chains: Exploring dynamic linkages between Germany and Pakistan*, Khalid Nadvi and Gerhard Halder (2005) use, for instance, the case of the global surgical instrument industry to analyse connections and differences between the industry's leading production clusters in Germany and Pakistan.

² In the last two decades, author and document citation and co-citation analyses—all of them developed in the fields of *bibliometrics* and *scientometrics*— have been relatively often applied to map the intellectual structure or knowledge base of different scientific fields, domains or disciplines. Also in the fields of management and organization—an example of an interesting review of the literature dedicated to these matters is the one carried out by Zupic and Čater (2015). Even to the literature on clusters and industrial districts. The technique of *bibliographic coupling* between scientific papers (Kessler, 1963), which seeks to identify the various active research fronts in a scientific field or discipline by means of a study about the most recent literature and additionally offers a more realistic *portrait* of the current state of the art, has been a less commonly used analysis technique, though.

³ Literature on *international business* has traditionally referred to localization using a national scope (Dunning, 2009, McCann and Mudambi, 2004; among others), thus dismissing the specificities and advantages of specific geographical locations (cluster and/or regions). However, it is possible to observe, as noted by Hervás-Oliver et al. (2015b, p.12) that there has recently been a shift in research towards the concept of territory (Beugelsdijk and Mudambi, 2013; Cantwell, 2009), explicitly recognising the role of local/regional *spillovers* (benefits based on specific locations) and starting to present specificities and details of local/regional spaces.



On the other hand, the contributions of Bell and Figueiredo (2012), Pietrobelli and Rabellotti (2011), Kadarusman and Nadvi (2013), Guimon and Paraskevopoulou (2017), Hansen, Fold and Hansen (2016) and Choksy, Sinkovics and Sinkovics (2017) about the crucial impact of international knowledge and innovation exchange and collaboration through, for example, inter-firm and intra-firm networks and global value chains (Pietrobelli and Rabellotti (2011) or the factors that shape the international knowledge connectivity of industrial clusters (Guimon and Paraskevopoulou, 2017) are part of another of the identified *research fronts*'.

Concerning possible limitations, the present study is subject to a number of important constraints, some of which result from the actual research design, while others are a direct consequence of using the bibliometric techniques implemented in bibliographic coupling analyses. In relation to this last type of limitation, we could highlight all those inherent to bibliometric studies based on citation analyses, amongst which stands out that the sense or purpose of the citations or the possible impact of self-citations are neglected during the analysis (MacRoberts and MacRoberts, 1996). On the whole, it is difficult to predict what proportion in the citation corresponds to the intrinsic quality of the cited work and what proportion actually has to do with factors such as the prestige of the cited journal or the institution to which the author belongs, the possibility to cite or refer to other works previously published by the citing author, spurious reasons, or even the adoption of a deliberate strategy to ensure the publication of a paper in a specific journal, which would imply including other papers published in that same journal amongst the references cited.

As for the remaining limitations, the most important one related to the actual research design logically derives from the selection of the criteria used to determine the source documents that would be ultimately considered in the analysis.

Finally, regarding possible research lines in the coming years, the present study constitutes the starting point for future analyses that should help better understand the scientific domain or field analyzed. The various analyses performed (*bibliographic coupling, social network analysis*) would have equally allowed us to make out –in the form of potential opportunities for future research– the existence of research “niches,” “spaces” or areas yet to be covered.

Keywords: clusters; global value chains (GVCs); bibliometrics; bibliographic coupling analysis (BCA); social network analysis (SNA).

JEL codes: R11, R39, F02, F23, C02, C45



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