

Rivals' identification and inter-organizational learning processes: what are the horizontal benefits of clustering?

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Since knowledge has become a crucial asset in modern production systems, its creation has become a key process in order to sustain or increase competitiveness. This shift toward a knowledge-based economy has amplified the interest on geographical clustering as a key factor on inter-organizational learning.

Unfortunately, while this interest has produced a number of investigations on the structure, types and strength of collaborations within clusters, little has been said regarding rivalry both within and across clusters. However, this orientation is at odds with standard theoretical assumptions regarding the influence of localisation on both cooperation and rivalry. Moreover, it is inconsistent with several long-term observations highlighting that industrial clusters exhibit more rivalry than diffused industries.

The ensuing lack of theoretical speculation and empirical research on rivalry impairs our ability to answer important questions, such as those regarding the advantages of geographical proximity. In particular, studies of inter-organisational learning would greatly benefit from appreciating the impact of competitive relationships on the access of firms to information and their judgement of its relevance.

The approach proposed in this paper is based on simulating the spatial dynamics of inter-organizational learning between rivals by means of an agent-based model (ABM). In our implementation, the ABM is used in order to derive structures of interactions from behavioural rules of single firms. In particular, the mechanisms regulating the behaviour of firms have been deduced partly from empirical studies, partly from widely accepted theoretical speculations.

The process of the identification of rivals is crucial for the dynamics of the model. In a previous empirical study of the Italian packaging cluster we have come to the conclusion that, for each firm, rivalry regards a small number of (generally) geographically proximate competitors. This finding is of great importance for our model, since the number of rivals adds to geographical proximity to determine a learning framework that drives decisions to strategically persist and reorient.

In our model, firms make decisions concerning both existing and novel combinations of products and markets. In order to update beliefs over novel possibilities, Shafer's evidence theory has been employed. In particular, novel combinations of markets and products have been handled as unexpected testimonies that change current beliefs. On the other hand, beliefs over the opportunities provided by current combinations decay if they are not reinforced by additional information.

The choice between exploiting available knowledge or exploring the possibility of creating a new one is assumed to depend on local complementarities between known pieces of knowledge. On the contrary, market evaluation is supposed to depend on global complementarities. This strain introduces the possibility of interesting dynamics of the creation and diffusion of knowledge.

