
From the Editor

This special issue of the Journal of Entrepreneurship, Management and Innovation, entitled *Proximity and Innovation in Clusters: How Close, How Far?*, tries to shed new light on the concept of proximity, which is a cognitively attractive but still scarcely explored area. The earliest publications on proximity were published at the end of the twentieth century, and the development of this concept was strongly influenced by the French School of Proximity. However, the most influential publications are by Ron Boschma, who distinguished five fundamental dimensions of proximity: geographical, social, cognitive, organizational, and institutional. Proximity is particularly essential for the development of cooperation among business entities embedded in a specific territory. The idea of proximity is reflected in all concepts of regional development based on knowledge and innovation. This also applies to the cluster concept, in which references to all the abovementioned dimensions of proximity can be found. Applying the category of proximity to the cluster concept can be treated as an attempt to understand and explain factors of a non-economic nature that may affect (positively or negatively) the development of innovation in clusters. Proximity is recognized as a factor facilitating access to knowledge and fostering the development of innovation. However, there are no unequivocal findings regarding the relevance of particular dimensions of proximity from the point of view of innovation development. Until now, the superior role of geographical proximity in creating a competitive advantage through innovation has been particularly emphasized in the literature. However, more and more authors have begun to depreciate the role of physical proximity, all the more so because it can be partially, or even entirely, replaced by other dimensions of proximity. Furthermore, being too close might also have a negative impact on the development of innovation in clusters – maximizing proximity may lead to isolation and closure.

The six papers published in this special issue focus on the multidimensional nature of cooperation developed in geographical proximity, while appreciating the importance of other non-spatial dimensions of proximity. Most of the presented papers deal with cluster cooperation, although among them, some adopt a slightly broader view of innovation ecosystems.

The first paper, by Marzena Frankowska, refers to the concept of embeddedness, which was used to understand better the relationships between the participants in a cluster-type inter-organizational network, and the development of cooperation. Due to its multidimensionality, the embeddedness concept – just like the concept of proximity – is perfectly suited to explaining the mechanisms for developing cooperation in clusters. In view of this, the author sought to define the key dimensions of enterprise embeddedness in a cluster. The research process included both qualitative and quantitative research. As a result, it was established that four dimensions of embeddedness are of key importance for cooperation between enterprises embedded in a cluster, namely: structural, geographical, institutional, and relational. Furthermore, it was confirmed that there is a positive relationship between the embeddedness of enterprises in a cluster and their cooperation.

The second paper, by Emilio Camarena-Gil, Carlos Garrigues, and Francisco Puig, focuses on cluster cooperation within innovation processes in the textile industry. The main purpose of the paper was to examine the effect of different dimensions of proximity on innovation processes as well as to analyze the level of coordination in a Spanish textile cluster. The authors conducted qualitative research in two leading firms operating in a textile cluster in Valencia. Their research shows that the innovations of cluster companies are developed in isolation, and additionally, in a discontinuous, marginal, and uncoordinated manner. Moreover, the study strongly emphasizes geographical and cognitive proximity in the studied cluster, and at the same time, indicates a low level of social proximity, which is manifested by a low level of trust among cluster partners.

Similar conclusions can be drawn from the third paper, written by Anna Wasiluk and Fahime Sadat Saadatyar. Given the importance of social proximity for the development of cluster cooperation, the authors set the goal of assessing the level of trust of enterprises to competitors and cooperators, as well as identifying factors affecting the level of this trust. The authors presented the results of quantitative research conducted in enterprises operating in Poland in selected sectors of the economy: construction, food, metal and machinery, and furniture. The presented research results show that the level of trust among the surveyed enterprises is low, and this does not apply only to direct competition. This severely limits the establishment and development of cooperation in the context of cluster activity. Although the problem of a low level of trust is often emphasized in publications concerning Poland, this problem is noticeable in other countries as well (an example of which is the earlier article on the Spanish cluster). The presented study, therefore, can contribute to those works regarding the development

of trust among companies operating within and outside clusters, taking into account the cultural context.

The fourth paper, by Marita McPhillips, links the concept of clusters with the concept of open innovation, which strongly refers to proximity, especially in the social, but also the cognitive dimension. The author's intention was to investigate the potential role of clusters as intermediaries of open innovation for cluster members, as well as to identify factors that may affect the successful adoption of this role by clusters. The study was exploratory and based on in-depth interviews with experts in the field of innovation and clusters in Poland. The findings add to the state-of-the-art knowledge by shedding new light on the role of clusters, which – acting as proxies – might support open innovation. As the study shows, this role is not limited only to the network of cluster members. Clusters, based on geographical proximity, which favor the development of trust and knowledge sharing, might shape and co-create a broader open innovation ecosystem.

The next two papers continue the issue of innovation ecosystems. In the fifth article, Elżbieta Wojnicka-Sycz, Marcin Kaczyński, and Piotr Sycz perceive Regional Smart Specializations as innovative ecosystems based on social, cognitive, and geographical proximity. The main purpose of the paper was to develop and test a tool for the analysis of the effectiveness of innovation ecosystems, taking into account the three distinguished dimensions of proximity. The authors developed a case study for the Subcarpathian region in Poland based on multiple analyses, including a literature review, web resources analysis, statistical data analysis (e.g., OECD Input-output tables), as well as an analysis of the results of the CAWI survey. The results of their study prove that Regional Smart Specializations (RSS), based on geographical proximity, also manifest cognitive and social proximity, as companies operating within RSS are more Research & Development and innovation-intensive, and more prone to establish and develop cooperative relationships. In the studied Subcarpathian region, this applies to Aviation, Automotive, and ICT RSS, which stimulate the innovation-based development of this region. The developed tool can be used for further analysis of the paths of cooperation and their trajectories in RSS.

In turn, the sixth paper, by Małgorzata Runiewicz-Wardyn, presents research on the role of proximity and its dimensions in creating university-driven social networks. Furthermore, the second research problem analyzed in the paper is the structure and dynamics of successful university-based innovation ecosystems. The study was conducted in selected university-based life-science ecosystems in the European Union and the United States using methods characteristic of both qualitative and quantitative research. The study identified the relationships between individual dimensions of proximity

within the university-driven social networks in life-science ecosystems. The research results indicate that proximity in the geographical, but also cognitive and organizational dimension contributes to the development of trust (and thus proximity in the social dimension). In turn, cultural and social proximity leads to better communication and knowledge sharing, which further strengthens cognitive proximity.

The papers collated in this issue introduce an additional voice to the discussion on clustering and proximity by delivering new insights into cluster cooperation, which is, on the one hand, developed on the basis of geographical proximity, and on the other, contributes to the development of proximity in different dimensions. The presented research results can also be helpful in determining the optimal level of proximity among cooperating entities in clusters or – with a slightly broader view – in innovation ecosystems, all the more so as there is no agreement as to what scale of proximity would be most beneficial for the development of cooperation, especially in the area of innovation. Moreover, the issues discussed may be the basis for further, more in-depth research. Finally, the papers provide some practical implications for public authorities responsible for the development of sets of strategies and policy measures leading to strengthening their region's cooperative and innovative potential. They can also be useful for cluster coordinators and members who, through participation in cooperation networks, experience effects related to the development of proximity in various dimensions.

I would like to thank the authors for their contributions to this special issue. I would also like to express my sincere thanks to the reviewers for their commitment and contribution to improving the quality of the submitted articles. I hope that the collated papers will be interesting for readers and will become an inspiration for conducting further research on proximity in clusters.

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