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Industrial Districts: Towards the future

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Abstract:

This article presents three objectives. First, based on a literature review, we point out different yet emerging sub-lines of inquiry within the Industrial District (ID) perspective that emerged from the last two decades. Second, we position the articles included in this special issue, highlighting contributions of each article to the districts' repository of knowledge. Finally, we outline the contours of promising research avenues within IDs, pushing the topic in new directions for scholars' research agendas.

1. Introduction

The notion of Industrial District (ID) was introduced by Alfred Marshall in the *Principles of Economics* (1890) and reintroduced a hundred years later by Giacomo Becattini (1979) in the main body of scientific literature. Since the 90s, the notion of the Marshallian Industrial District (MID) has diffused rapidly in the scientific economic literature in English (see Figure 1).

What is extraordinary, however, is the variety and dynamism of the topics that the literature of the Industrial District has produced over the last 40 years. When Giacomo Becattini published the seminal article "Dal settore industriale al distretto industriale. Alcune considerazioni sull'unità d'indagine dell'economia industriale" (the English version can be found in Becattini, 2004), in 1979, articles referring to Industrial District were very scarce and came mainly from English economic historians analyzing Industrial Districts. From that moment on, the Industrial District acquired its own entity, and a wide variety of topics on Industrial Districts began to be discussed; in the 80s, typically those such as understanding sectors vs. districts, local organization of production, the role of small firms, entrepreneurship, labor markets, technical change, among many more (see Figure 1¹).

¹ The analysis in the following paragraphs is based on a search by year since 1980, in which the term "industrial district" is identified in *Google Scholar* accompanied by the reference to one of the best-known original authors: Marshall or Becattini or

The year 1990 represents a milestone for the reintroduction of the Industrial District with the publication by the *International Labor Organization* (ILO) of “Industrial districts and inter-firm co-operation in Italy” (by Pyke, Becattini and Sengenberger, 1990). During the 1990s, works on Industrial Districts in the English language began to grow rapidly. The topics of the most cited works on Industrial Districts cover the very notion of the Industrial District and the theory of the district, pathways to industrialization, flexibility, decentralized industrial creativity, economic policy, regeneration, decline, trust, district-effect, cooperation and competition, socio-identity regulation, development, economic changes, innovation, leading and anchor firms, specialization, organizational inertia and district versus *milieu innovateur*.

During years 2000 to 2008, while papers on Industrial Districts grew rapidly, new social topics were consolidated: loyalty, dynamics of the community, social networks; economic: evolution of capitalism, exports, structure and behavior of the firms, differences between firms in the districts, *districtualization* processes, uncertainty, innovation, types of advantages, knowledge networks, tourism, and energy and emissions; also local institutions and governance. The year 2009 marks another milestone in the literature on the Marshallian Industrial District with the publication of the *Handbook of Industrial Districts* (by Becattini, Bellandi and De Propris, 2009). The Handbook summarizes the state of the art on Industrial Districts from Marshall's Principles of Economics (Marshall, 1890) to the first decade of the 21st century (Sforzi, 2015). It would be a few years later, in 2012, that the number of new works written in English would reach its maximum, with 718 citations. After 2012, there was a slight decline in the number of articles each year in English, especially after 2020 (see Figure 1).

Since 2009, and during the Great Recession, the conversation introduces, as relevant topics in the most cited works, references to globalization, outsourcing, partner location, Chinese immigration in Prato and others. Starting during the 2019 to 2020 period, the notion of Industrial District is reinvigorated through many different emerging sublines of inquiry that constitute promising new research avenues, such as *digitization* (e.g. Hervas-Oliver et al., 2021a; Bettiol et al., 2021; De Propris and Bailey, 2020), *place-based innovation policies* (Hervas-Oliver et al., 2019; Boix-Domenech et al., 2019; Bellandi et al., 2021a), *multinationals*

Brusco or Trigilia. This analysis has no more pretensions than to highlight the variety of topics introduced in the literature of the Industrial District and how new topics have acquired relevance over time.

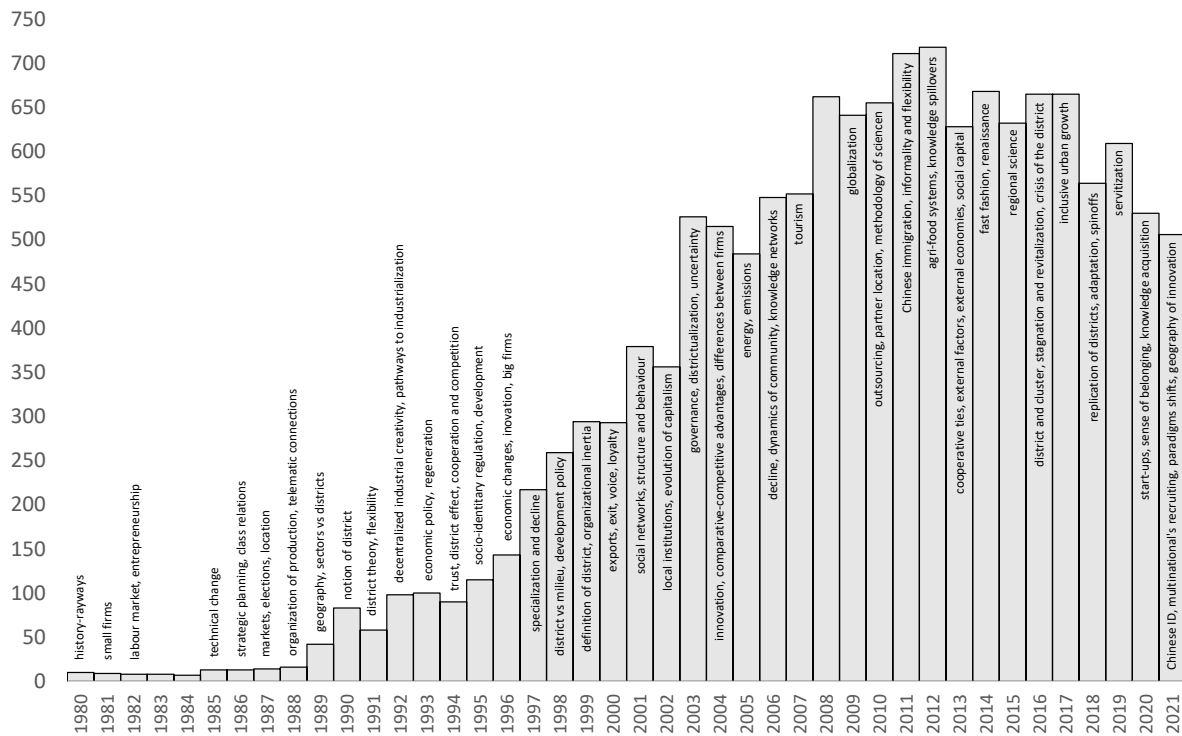
(Belussi, 2018; Hervas-Oliver et al., 2021b) and scholars start to pay more attention to *sustainability* (Chaminade and Randelli, 2020).

Since 2021, the debate has discussed new phenomena, such as agri-food systems and fast fashion. Overall, other topics of the most cited works are informality and flexibility, knowledge spillovers, external economies, spatial networking, social capital, sense of belonging, cooperative ties, stagnation and revitalization, crisis of the district, replication of districts, clusters vs districts, adaptation, spinoffs, start-ups, knowledge acquisition, geography of innovation, inclusive urban growth, Industry 4.0, *servitization* and circular economy, among many others. In parallel to these new research avenues, literature also re-elaborates and advances the most traditional topics, such as *learning* (Bellandi, Propriis and Vecciolini, 2021b), or *networks* (Belso-Martínez et al., 2020; Ruiz-Ortega et al., 2020), among others.

The notion is also boosted by a series of new annual meetings named *Rethinking Clusters*², held initially at Firenze, Padova and Valencia and which moves to Japan in 2022, where the concept is at the forefront of discussions, reflections and a lively academic conversation. Thus, the conversation on Industrial Districts is continuously strengthened by incorporating new perspectives that established fine-sliced sub-lines of inquiry that entice a deep capillarity of the construct. In recent years, different works have started to discuss new ideas, such as circularity from a supply-chain perspective in IDs (see Bressanelli et al., 2022); new topics, such as the role of the family involvement in governance and firm performance in Industrial Districts (see Pittino et al., 2021); the role of radical innovation in IDs within large cities (see Ekaterina and Oreshkin, in this Special Issue) or how mergers and acquisitions reconfigure traditional IDs (see Hervas-Oliver et al., 2022).

² Led and organized since 2018 by Dr. Lazzeretti, Dr. Sedita, Dr. Hervas-Oliver, Dr. Capone, Dr. Boix and Dr. Caloffi. These meetings are held with the usual collaborators and friends, such as Dr. Asheim, Dr. Rodríguez-Pose, Dr. Boschma, Dr. Iammarino, Dr. Belussi, Dr. Di María, Dr. Grandinetti, Dr. Bellandi, Dr. Bettiol, Dr. De Propriis, Dr. Belso, Dr. Tripl, Dr. Grillitsch and many more that are very engaged in the topic and related ones.

Figure 1. Number of references to MIDs in English in Google Scholar by year and new topics in the three most cited articles by year*.



* Keywords: Industrial District AND ("Marshall" OR "Becattini" OR "Brusco" OR "Trigilia").

2. Special Issue: Industrial Districts into the future!

This Special Issue includes ten papers that address a diverse array of topics and lines of research within the construct of Industrial Districts but also of regional clusters or other types of local production systems, with the intention of maintaining a cross-dialogue between related yet different concepts that share some similar characteristics. Scholars from different countries such as Spain, Italy, Poland, Germany, UK, Brazil, Uruguay or Canada participated in this conversation aimed at providing a high-quality and up-to-date set of studies with which to understand much better the current state-of-the-art in IDs. Starting with 22 papers, the final selection shows a comprehensive and diverse combination of thought-provoking contributions developed through empirical qualitative and quantitative lenses.

Contributions to the Special Issue include important themes that represent the live and vibrant open conversation on IDs. Focusing on Industry 4.0 adoption by SMEs and IDs, Dr. Hervas-Oliver shows the contribution of research and transfer institutes (RTIs) digitizing IDs. The study evidences how RTIs introduce digital technologies in local innovation systems to foster

change and avoiding inertia on Industry 4.0 adoption. Utilizing qualitative evidence based on interviews and secondary data analysis on digitizing the *Vinalopo* Footwear district in Alicante, Spain, the article provides empirical insights about how RTIs perform R&D and non-R&D activities to digitize SMEs, an action leveraged by transferring knowledge to leading firms that frequently engage with RTIs. Subsequently, these leading firms interact and diffuse Industry 4.0 within their own networks of SMEs, achieving an indirect transfer of digital technologies from the RTI to SMEs.

As regards radical innovation in innovation systems, Dr. Turkina and colleagues, from HEC Montréal, investigate the evolution of the phenomenon of the Industrial District and explores broader regional innovation systems that consist of multiple Industrial Districts. Using network analysis and patent analysis techniques concurrently, the social structure of Montreal tech agglomeration and its innovation is analyzed, discovering that the cores of modern regional innovation systems are composed of densely collaborating organizations belonging to different industrial clusters. The study also shows how these organizations are responsible for the most radical innovations.

Dr. Burlina and colleagues, positioned in the Global Value Chains (GVCs), revisit theoretical and empirically the topic of the regionalization of GVCs, challenging internationalization of SMEs in IDs. By analyzing 210 ID SMEs in the furniture, mechanics and fashion industries located in the Veneto and Friuli Venezia-Giulia regions, the article shows how to sustain the economic development of district firms and territories in front of this new phenomenon of the regionalization of GVCs.

Focusing on ethnicity and migration in clusters, Dr. Mario Biggeri and colleagues investigate the distinctive economic and social dynamics of ethnic industrial sub-clusters. In particular, they analyze the main factors affecting the economic performance of Chinese-migrant micro-entrepreneurs with a specific focus on social capital. Based on the case study of *Wenzhounese* migrant socioeconomic leather industrial sub-cluster in the area of Florence, Italy, and using mix-methods, the study researches social capital and its effects in this particular setting. Findings show the relevance of social networks in the context analyzed and reveal the importance of ethnic and non-ethnic business social capital as one of the main factors affecting local firms' economic performance.

Focusing on the fundamentals of IDs, Dr. Boix-Doménech and colleagues provide fine-grained insights on the iMID effect in order to show that firms located in Marshallian Industrial Districts (MIDs) tend to exhibit higher innovative intensity than other local production systems in Spain and Italy. The district effect on innovation (iMID effect) had been previously measured for Spain, but never for Italy. This paper contributes by providing for the first time a measurement of the iMID effect in both countries, remarking that, on average, the innovative intensity of Italian MIDs is not only higher than that of the average for the Italian economy, but also that of the MIDs in Spain.

Intersecting KIBS and districts, Dr. De Propris and colleagues analyze territorial *servitization* in Italian Marshallian districts by separating the role of *technological* and *professional* KIBS. Despite being traditionally represented by over-specialization of manufacturing activities and relatively low presence of KIBS, Industrial Districts show a higher rate growth in KIBS than the national average, discussing interesting implications for the district literature.

As regards clusters in Poland, Dr. Wojciech and colleagues explore three clusters qualitatively through interviews, focusing on the role of business support organization facilitating adoption of Industry 4.0. Findings suggest that support organizations act as gatekeepers, brokers and facilitators of Industry 4.0 knowledge, helping local SMEs to overcome barriers to adopt Industry 4.0.

The Special Issue also presents a little-known case study, that of the milk production cluster in Uruguay. It is an agro-industrial cluster of large geographic dimensions in a low-density area. Dr. Galaso and colleagues apply a social network analysis approach to identify and analyze different sub-groups of firms within the cluster. Their results suggest a complex internal structure of the cluster, where there coexist different local productive systems and other forms of productive organization. This study highlights cluster heterogeneity and diverse knowledge networks within.

By incorporating absorptive capacity and knowledge access in clusters at the firm level, Dr. da Cunha and colleagues study a low-technology intensity cluster in Brazil. Using 109 questionnaires from a Brazilian footwear manufacturing cluster, findings indicate that small companies have access to novelties and knowledge that influence their products and production through the frequency and stability of the network relational ties with their suppliers. Also, the quality of relations with clients provides access to products, materials, technology and market

knowledge learning. According to their results, accessing knowledge in clusters is determined by the quality and stability of inter-firm ties and firms' organizational capabilities, capturing absorptive capacity in the case of clustered SMEs in low-tech settings.

Last but not least, Dr. Ruffoni and colleagues analyze cluster evolution, focusing on the less studied decline phase of a footwear cluster in the state of *Rio Grande do Sul*, in Southern Brazil. Once considered the world's largest footwear cluster, this study shows its transformation since the beginning of the 2000s by using sectoral statistics. The main results of this case study indicate a significant reduction in production, export, and employment, in addition to a new situation of precarious labor. This decline occurred due to two central factors: a) an external shock related to China entering the international and Brazilian domestic markets, accompanied by a slowdown in the Brazilian economy since 2015; and b) the difficulty of local firms to respond to new challenges. The paper contributes to explain a cluster decline trajectory, extending our knowledge on this specific stage of the cluster lifecycle.

As avenues for future research, we would like to point out a potential research agenda that suggests promising new insights to keep building a solid knowledge base on our construct of Industrial Districts. First, it is obvious that beyond the research on Industry 4.0, a sub-line that is still scarce, we need to incorporate new digital-based (Artificial Intelligence, Machine Learning, Big Data, etc.) methods to our traditional research. Second, the IDs are being transformed, observing new types of social agglomerations where traditional and non-traditional sets of actors co-exist (local firms, migrant entrepreneurs, financial investment funds, multinationals, GVCs, etc.) that might require further research on them and also on their intersection with traditional district topics. Third, sustainability and other environmental and social perspectives (gender gap, green innovations, etc.) need to be placed on the research agenda. Lastly, the usual topics (radical innovation, network analysis, multinationals, etc.) also require more efforts to include clusters from the new emergent world, thus testing whether our knowledge is applicable to those new realities.

To conclude, we want to open this research avenue and gather researchers and scholars from all different disciplines (economics, business, regional science, technology management, strategy, etc.) to tackle the phenomenon of Industrial Districts through different approaches, as it is a promising research agenda for understanding the role of SMEs in territories, the local

development of regions and industries and the organization of that socio-economic phenomenon that IDs represent.

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