

SUMMARY OF ARTICLE: doi: <http://dx.doi.org/10.12795/rea.2019.i38.08>

Strategic Sectors in the Knowledge Economy and Development in the City of Madrid and its Region


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KEYWORDS

Strategic sectors
Innovation
Firm networks
Urban strategies

The globalisation process and the increasing integration of the world economy have favoured increasing levels of competition between companies and between territories. Large cities would thus see their position at the head of the urban system reinforced, specializing in higher-level sectors and functions such as those that are more technology- and knowledge-intensive. A set of innovative or strategic clusters is usually identified in the context of cultural-cognitive capitalism: high-intensity technological industries, knowledge-intensive services, including advanced business services, as well as cultural industries.

The purpose of this research is to contrast the strategic nature of the activities of the knowledge economy in the case of the city-region of Madrid and provide an update on the diagnosis of recent progress, thereby offering a framework for reflection to guide the city's priorities in terms of the promotion and management of these activities. The study proposes three complementary methodological approaches.

First, the research reviews the strategies undertaken at the different levels of intervention, in relation to the selection and promotion of strategic economic sectors. More specifically, the study focuses on the analysis of nine European cities, selected for their high economic ranking for cities. The sectorial scope of this identification has deliberately not been limited in order to assess the importance given to technology- and knowledge-intensive sectors within the framework of the respective local economies.



Secondly, there is a study of the importance of strategic activities in the development of the regional productive and research system. For this purpose, the analysis of input-output links (based on the latest input-output data available for the Community of Madrid in 2010) has been proposed. This analysis is completed with an assessment of the role of technology and knowledge-intensive activities from the perspective of other interactions with higher education and research institutions in the region.

Thirdly, there is an analysis of the temporal and spatial dynamics of affiliated employment using Social Security micro-data (2011-2016). Analysis at the two-digit level of the CNAE2009 (National Classification of Economic Activities), in addition to the districts of the city and the municipalities of the Madrid region, allows us to obtain a detailed image of both recent dynamism and spatial trends.

In terms of results, the review of the OECD and EU proposals confirms that sectorial economic policies tend to be replicated in different areas of application. In the case of the nine European cities analysed (London, Paris, Berlin, Amsterdam, Brussels, Zurich, Barcelona, Vienna, Stockholm), different approaches can be observed when identifying strategic sectors, although these are clearly related to the guidelines established by international organizations.

Specifically, four are common to the nine cities analysed, i.e. health and life industries, creative and cultural industries, information technologies and telecommunications. Four other sectors, the financial sector, green industries, higher education and tourism are also considered in most of the cases analyzed. Of note is the coherence in the selection of strategic sectors in European cities with the approach observed in recent decades in the case of Madrid, including its *Regional Research and Innovation Strategy 2014-2020 (RIS3)*.

In terms of inputs and outputs, high-intensity technological industries have a considerable global pull effect, as consumers of intermediate inputs from many other activities. However, high-intensity technological industries show a much more discrete role when considering data from the interior of the Madrid region, with a few exceptions. The important degree of internationalisation and integration of these activities into multinational groups, together with the trend towards the reduction of some regional clusters in recent decades, would explain why the main effects are directed, above all, towards the outside of the region. Faced with this, most advanced business services (such as IT, headquarters and business management, technical services, advertising and market research, as well as legal and accounting activities) are positioned as strategic activities for the operation and value generation of companies in the region. Moreover, most of them also have direct or indirect pull effects outside the regional territory. All this is related to the concentration of advanced tertiary functions in Madrid, as the governing nucleus of the Spanish urban system, through which the bulk of national and international economic flows are channelled and organized.

Other knowledge-intensive service activities, such as telecommunications, financial intermediation or auxiliary financial and insurance services, emerge as fundamental activities for the expansion of the regional productive fabric. Lastly, cultural industries have above-average domestic multiplier effects, although they sometimes involve activities outside the region. The result confirms the strategic nature of the activities of the so-called "creative economy." As the European Commission itself points out, *"the cultural and creative industries represent a set of highly innovative companies, with great economic potential, and constitute one of the most dynamic sectors in Europe."* Together with all this, there has been a confirmation of the existence of important links within the regional innovation system between the companies of the activities identified and the research groups belonging to higher education institutions and research centres in the region.

Finally, the analysis of employment data and its recent evolution provides results that have been contrasted by innovative clusters. In order of importance, advanced business services stand out (269,150 jobs in 2016), ahead of other knowledge-intensive services (114,894), cultural industries (39,484) and technology-intensive industries (19,865). In relation to the resilience of the innovative clusters, there is a decrease between 2011 and 2016 of employment in the high-intensity technological industry (-17.31%), affected by capacity adjustments during the crisis and the (re)location decisions of the sector's multinationals. Equally negative was the employment performance in the cultural industries (-13.79%). In contrast, other sectors that experienced an important adjustment during the austerity phase, such as artistic creation, shows or museums and archives, come off better overall in this period. However, other knowledge-intensive services, which experienced a smaller fall (-2.90%), seem to recover once the restructuring of the financial sector has



concluded. Meanwhile, advanced business services show a positive rate of change of 14%. In this sense, their capacity to recover is confirmed as the crisis ends and as demand by the productive fabric of Madrid recovers, along with contracting from the public sector.

From the point of view of the level of implementation of strategic activities in the territory of Madrid, the work delves into the spatial dynamics of employment at the regional level and within the city. On the one hand, the existence of different trends in the location of strategic sectors has been confirmed, in relation, for example, to the processes of productive decentralisation and relocation of the high-intensity technological industry to the rest of the metropolitan region, or to the appearance of new forms of advanced tertiary services and cultural sectors (such as corporate cities, business parks, science and technology parks, etc.).

However, at the same time, the central city continues to stand out as the preferred location for many of these activities. This highlights the volume of activity in advanced services and national and international financial companies, which would provide the rest of the business fabric with the strategic knowledge needed for Madrid's inclusion in globalisation and which find in the city advantages of location related to the generation of urbanisation and network economies, not to mention other factors related to being located in prestigious areas. Simultaneously, the attractiveness of the city for cultural industries has been confirmed, especially in relation to the density of the sector's business networks or the symbolic value of its historical-cultural centre.

In short, despite the fact that this type of activity in the knowledge economy tends to be a preferential option when it comes to developing sectorial and innovation policies with a territorial approach, its recent performance has been very heterogeneous in the case of Madrid. In any case, innovative clusters have been confirmed to be playing an important role from the point of view of employment in the region of Madrid and, especially, in the central city, where they now make up a quarter of total employment. They are also fundamental for the internal articulation of the productive system and the regional innovation system, also ensuring the connection with the global economy. All of this, together with the capacity for resilience exhibited by several of these activities (especially advanced services for companies and cultural and creative industries), means that they can be considered strategic for bringing together new urban and regional development programmes.