# Regional innovation and the new territorial governance. French and Spanish cases

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**Abstract:** The European territories, especially in the southern and eastern peripheries, face various challenges linked not only to socio-economic globalization, but also to population aging and climate change. The regional innovation policy offers the possibility of facing these challenges and contributing to the cohesion - economic, social and territorial - provided that the specific characteristics of each territory are taken into account. Decentralization is a fundamental factor in the design of policies that clearly respond to the principle of subsidiarity of the European Union. In our work, we deal with the cases of Spain with a degree of quasi-federal decentralization with broad competences designed in the 1978 Constitution, and that of France that has progressively decentralized in the last decades until reaching the 2015 reform in which they reduced the regions from 22 to 13 in order to create functional territories that would help reduce regional divergences. Although in both cases there are marked differences between the territories, innovation rates are higher in the French case, while in Spain only the Basque Country is included in the group of strong innovators. The objective of this work is, therefore, to analyse the policies developed - design, objectives and financing- and the governance model -characteristics of the subcentral levels of government- in order to highlight their strengths and weaknesses.

**Keywords:** cohesion, territory, innovation, governance

## Introduction

The turn of the century was a new scenario for the European Union both outside and within its borders. The great enlargement towards the East, the definitive economic and political globalization, the intense migratory flows, the aging of the population and the economic-financial crisis forced the European institutions to modify the objectives of their policies. Among these changes is the foreground given to the objective of competitiveness and innovation policy, complemented by new regional strategies and the so-called smart growth.

There does not seem to be any doubt that regional innovation policies can become the ideal instrument to face the multiple challenges and socio-economic transformations. For this, they will have to combine

a broad vision of change inserted in the common European policies with the territorial perspective considering the specific characteristics of the space in which they will be applied. That is, to make the principle of subsidiarity effective without losing sight of the objectives set by the Europe 2020 Strategy. This implies creating a strong synergy between cohesion, competitiveness and innovation with a markedly territorial character. It should not be forgotten that, as Bevilacqua *et al.* (2017) claim, there is a link between the regional innovation strategy (RIS3) and the principle of territorial cohesion, because the territorial approximation of this is based on its character of development policy (Regulation 1303/2013). Therefore, the initial concept of "smart specialization" that emerges as a response to the deficiencies identified in the EU in terms of competitive weakness in research and development is left behind. The objective of filling these differences will be the four-helix model -based on development and endogenous resources, cooperation with other territories, innovation and application of the creative process- that appears as essential in the definition of new regional innovation strategies.

However, innovation policies and regional strategies have highlighted the diversity and divergences that exist between the Member States and within each one of them. The Barca report (2009: 129) included an innovation index (2002-2003) that highlighted regional disparities in terms of innovation. Among the possible causes the author highlighted the fragmentation of the national research system, while among its consequences he cited the following: not taking advantage of the effects of scale; leakage of human resources and very limited relationships between research centres and the private sector; excessive diversity, positive in many cases, but negative in the dispersion and in the appearance of externalities that are not taken advantage of; and research overproduction in the same line.

This is one of the main challenges of innovation, since the differences in the application of territorial policies and their design have to do with the different quality of their governments, their ability to absorb funds, and their institutional capacities. According to Morisson and Doussineau (2019), it is based on the fact that there is no single regional innovation policy framework that can be applied to all territories. In this sense, Tödtling and Trippl (2005) affirm that the differences are related to the concrete innovation priorities according to the capacities, the industrial base and the institutional context. However, Fritsch and Graf (2011) conclude that the analysis of a RIS should take into account not only (sub) national conditions, but also the position of the region within the socio-economic framework of the surrounding space. That is, it is not enough to study only the region to design the regional innovation policy. In addition to these factors, the governance model and the degree of decentralization are fundamental, as affirmed by Hassink and Marques (2015), who are committed to strong regional institutions without forgetting that the state level continues not only to contribute decisive factors for innovation, but also explaining the different rates of economic growth, as well as the problems at the regional or local levels.

Regional planning following the principle of territorial cohesion is key to the development of innovation policies is truly efficient and effective. In this sense, the state framework continues to be fundamental even when processes of a bottom-up nature are favoured. All of them must be part of a state strategy that facilitates synergies between all territories in line with European policies. Especially if we take into account that innovation has a marked preference for urban areas, especially for larger ones, contrary to what happens in rural areas, and to a lesser extent in intermediate urban areas (Dijkstra, Garcilazo and MacCann, 2013).

Taking into account the different elements linked to regional innovation policies and that the objective of this paper is to analyse the management, design and financing of these policies in the French and Spanish regions, the structure of the article is as follows: first after this introduction the second section will address the regional position of Spain and France with respect to competitiveness and innovation indices; In a third section we will analyse the situation of innovation policies, that is, the application of decentralized governance, using the data and references offered by the Regional Innovator Monitor Plus (institutions, regulatory framework and financing). Finally, the work closes with some reflections.

**The cohesion-innovation relationship**

The 2014-2020 programming period definitely puts the accent - and the budget - on the objective of competitiveness. Its objectives are those of the Europe 2020 Strategy, approved in 2010, which is developed around three priorities: intelligent, sustainable and inclusive knowledge. The first of these priorities is based fundamentally on innovation - and on knowledge - to achieve the above-mentioned objective of competitiveness. Therefore the concept of intelligent specialization is currently part of both the Innovation Union program and the cohesion policy reforms (MacCann, Ortega-Argilés, 2015).

In our analysis we started from the regional competitiveness index, since the third group of factors are related to innovation[1], based on the link established by Sabatino and Talamo (2017). The 2016 edition, like the previous ones, shows elements linked to cohesion, which would indicate the need to maintain the structural aid of both the ERDF and the ESF. To maintain the cohesion-competitiveness-innovation link, we have organized the analysis following the typologies of regional policy aids for the 2014-2020 period (less developed regions and more developed regions) in combination with the regional innovation index. For our study we will leave the Canary Islands for being considered an outermost region and the autonomous cities of Ceuta and Melilla for having very peculiar socio-economic and geographic characteristics. In the French case, our analysis will focus on metropolitan France.

Table 1 shows the positions occupied by the Spanish regions with respect to all 263 regions analysed, both attending to each of the groups of factors and the global competitiveness index. The best placed region is the Community of Madrid, both in the RCI and in the pillar of efficiency and especially in innovation. The second position is occupied by the Basque Country, but in a much more remote position, although it is the best placed with respect to the efficiency pillar. As far as the pillar of basic factors is concerned, there is no Spanish region among the top 100. The last position is occupied by Extremadura, which receives Community Funds as a less developed region during the 2014-2020 programming period.

[1] The three pillars on which the Regional Competitiveness Index is based are, in turn, formed by a series of factors that contribute to a greater or lesser extent to determine the degree of competitiveness of a territory. Thus, the basic pillar includes institutions, infrastructures, macroeconomic stability, health, and basic education. The efficiency pillar covers the factors of higher education and lifelong learning, labour market efficiency and market size. Finally, the innovation pillar refers to technological readiness, business sophistication and innovation.

Table 1. Global position of the Spanish regions in the EU

| | Basic Pillar | Efficiency Pillar | Innovation Pillar | Regional Competitiveness Index (RCI) |
|---|---|---|---|---|
| Galicia | 181 | 191 | 179 | 181 |
| Principado de Asturias | 173 | 188 | 172 | 174 |
| Cantabria | 161 | 167 | 171 | 164 |
| País Vasco | 153 | 78 | 134 | 119 |
| Comunidad Foral de Navarra | 151 | 130 | 160 | 148 |
| La Rioja | 154 | 196 | 185 | 184 |
| Aragón | 140 | 194 | 169 | 173 |
| Comunidad de Madrid | 104 | 82 | 57 | 83 |
| Castilla y León | 152 | 199 | 192 | 187 |
| Castilla-La Mancha | 143 | 240 | 207 | 216 |
| Extremadura | 174 | 252 | 219 | 230 |
| Cataluña | 129 | 175 | 138 | 153 |
| Comunidad Valenciana | 156 | 205 | 175 | 184 |
| Illes Balears | 167 | 222 | 178 | 200 |
| Andalucía | 164 | 244 | 187 | 220 |
| Región de Murcia | 160 | 227 | 196 | 210 |

Source: European Regional Competitiveness Index.

Table 2 shows the positions of the French regions prior to the modification of their limits, although we have grouped them to better observe their characteristics. Île-de-France is the best region in terms of competitiveness, standing out in the efficiency pillar and ranking among the top ten regions of the European Union. Midi-Pyrénées and Rhône-Alpes are the next best-placed regions, both also standing out in the efficiency pillar. The worst index corresponds to Corsica and is similar to that of Spanish regions such as Galicia, La Rioja or the Valencian Community.

Table 2. Global position of the French regions in the EU

| New Regions | Old Regions | Basic Pillar | Eficiency Pillar | Innovation Pillar | Regional Competitiveness Index (RCI) |
|---|---|---|---|---|---|
| **Île de France** | Île de France | 58 | 4 | 18 | 8 |
| **Grand Est** | Champagne-Ardenne | 119 | 150 | 140 | 143 |
| | Alsace | 94 | 93 | 119 | 105 |
| | Lorraine | 123 | 125 | 135 | 130 |
| **Hauts-de-France** | Picardie | 116 | 139 | 154 | 142 |
| | Nord - Pas-de-Calais | 120 | 136 | 150 | 136 |
| **Normandie** | Basse-Normandie | 144 | 124 | 152 | 138 |
| | Haute-Normandie | 134 | 119 | 146 | 132 |
| **Centre-Val de Loire** | Centre | 112 | 97 | 138 | 115 |
| **Bourgogne Franche-Comté** | Bourgogne | 111 | 128 | 155 | 134 |
| | Franche-Comté | 128 | 126 | 123 | 126 |
| **Pays de la Loire** | Pays de la Loire | 127 | 82 | 137 | 115 |
| **Bretagne** | Bretagne | 145 | 57 | 112 | 105 |
| **Nouvelle Aquitaine** | Poitou-Charentes | 140 | 147 | 152 | 148 |
| | Aquitaine | 132 | 120 | 121 | 124 |
| | Limousin | 148 | 133 | 150 | 145 |
| **Occitaine** | Languedoc-Roussillon | 135 | 141 | 132 | 140 |
| | Midi-Pyrénées | 132 | 59 | 69 | 87 |
| **Auvergne Rhône-Alpes** | Auvergne | 150 | 115 | 125 | 129 |
| | Rhône-Alpes | 102 | 50 | 73 | 68 |
| **Provence-Alpes-Côte d'Azur** | Provence-Alpes-Côte d'Azur | 131 | 111 | 104 | 117 |
| **Corse** | Corse | 174 | 197 | 173 | 183 |

Source: European Regional Competitiveness Index.

Regarding the Regional Innovation Scoreboard, the measurement system distinguishes four main types of indicators and ten dimensions of innovation, resulting in a total of twenty-seven different indicators. *Framework conditions* measure the main drivers of innovation performance external to the company and encompass three dimensions of innovation: human resources, attractive research systems and an environment favourable to innovation. The *investments* indicator measures public and private

investment in research and innovation and covers two dimensions: financing and support and investments of companies. The *innovation activities* take into account the innovation efforts of the company grouped into three dimensions of innovation: innovators, links and intellectual assets. The *impacts* indicator covers the effects of the company's innovative activities in two dimensions of innovation: impacts on employment and impacts on sales (European Innovation Scoreboard 2018 - Executive summary).

If we apply all these indicators to the map of the European Union, we will see how four groups of countries are established: leader in innovation and three degrees of innovators: strong, moderate and modest. The inclusion in each of these groups and their position within them has varied since 2010, the reference date of the first innovation index and coincides with the signature of the Europe 2020 Strategy. Graph 1 shows both the four groups of countries such as the evolution of the innovation index. In line are Romania and Bulgaria, whose situation has worsened since 2010, more sharply in the first case. The group of moderate innovators includes both countries in Central-Eastern Europe and the Mediterranean, corresponding to a periphery that still needs cohesion policy for its development, and which was very affected by the economic crisis of 2008. In this case, the situation of Croatia, Cyprus, Estonia and the Czech Republic has worsened with respect to the 2010 index, and that of Portugal, Greece and Hungary has stagnated. The group of strong innovators includes Slovenia, France, Austria, Ireland, Belgium and Germany. The latter has somewhat reduced the situation compared to 2010. And finally, the leading group, the leaders in innovation are Luxembourg, the United Kingdom, the Netherlands and the Nordic States (Finland, Denmark and Sweden).

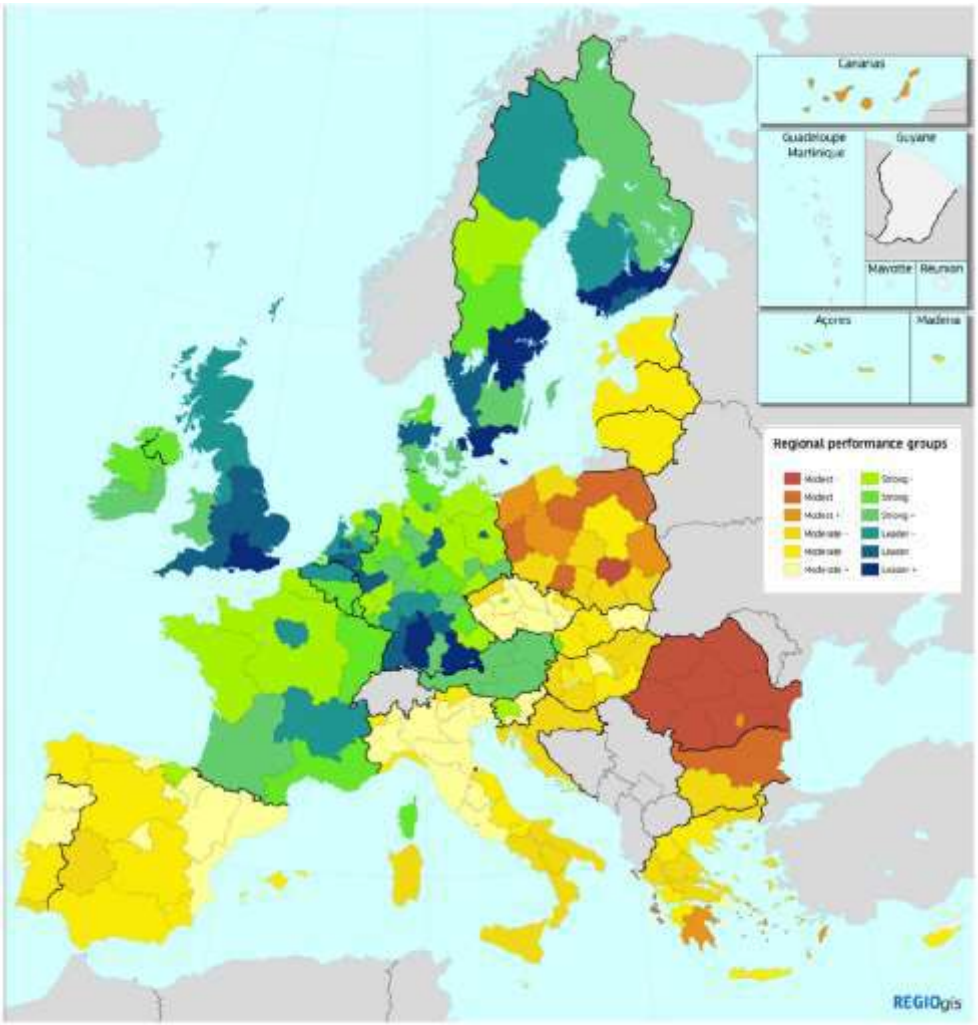
Graph 1. Performance of EU Member States' innovation systems, 2010-2017


Source: European Commission (2018a: 7).

As with the Competitiveness Index, the analysis at the regional scale shows a heterogeneous panorama, as it appears in Figure 1. In the case of Spain, characterized as a moderate innovator, several levels of innovation are observed, ranging from the lowest in Extremadura, an intermediate level in the case of Galicia, the Principality of Asturias, Castilla y León, Castilla-La Mancha, Andalusia, Murcia and the Balearic Islands, to a greater degree in Cantabria, La Rioja, Comunidad Foral de Navarra, Aragón, Cataluña and Comunidad de Madrid. The Basque Country is an exception to be part of the group of

strong innovators. As for France, the whole of the country is characterized as a strong innovator, although Île-de-France and the Centre-Est region are leaders in innovation.

Figure 1. Regional performance groups




For Cyprus, Estonia, Latvia, Lithuania, Luxembourg and Malta, performance group membership is identical to that in the European Innovation Scoreboard 2017 report. For these countries, the corresponding colour codes for middle one-third regions have been used.

Source: Regional innovation scoreboard

In addition to territorial diversity, the innovation index shows a different evolution in the Spanish regions (Table 3) and in the French regions (Table 4). In the first case it is easy to observe the effects derived from the economic crisis with a reduction of public and private investment. On the contrary, the French regions show a more constant evolution, although the Est region and the Méditerranée region have experienced a setback in 2017.

Table 3. Spanish Regions. Regional Innovation Scoreboard 2017. Relative performance to EU in 2011

| | **RII2009** | **RII2011** | **RII2013** | **RII2015** | **RII2017** |
|---|---|---|---|---|---|
| EU28 | 97,3 | 100,0 | 101,5 | 101,9 | 102,6 |
| Galicia | 72,3 | 73,5 | 77,1 | ***69,3*** | 73,5 |
| Principado de Asturias | 68,2 | 73,3 | ***71,3*** | ***69,7*** | ***68,5*** |
| Cantabria | 72,9 | ***72,6*** | 77,9 | ***71,1*** | ***73,8*** |
| País Vasco | 90,6 | 95,2 | ***95,1*** | ***89,9*** | 93,9 |
| Comunidad Foral de Navarra | 95,7 | 98,7 | ***97,1*** | ***82,1*** | 87,8 |
| La Rioja | 71,0 | 76,1 | 82,8 | ***73,7*** | 77,3 |
| Aragón | 82,8 | 83,0 | 87,8 | ***78,4*** | 80,1 |

| | | | | | |
|---|---|---|---|---|---|
| Comunidad de Madrid | 87,1 | 88,6 | 90,9 | ***84,5*** | 88,2 |
| Castilla y León | 71,7 | 74,9 | 76,1 | ***63,5*** | 68,3 |
| Castilla-la Mancha | 61,7 | 63,5 | 65,6 | ***58,9*** | 61,4 |
| Extremadura | 50,7 | 57,1 | ***55,9*** | ***48,5*** | 56,8 |
| Cataluña | 91,3 | 91,9 | 92,7 | ***87,0*** | 90,9 |
| Comunidad Valenciana | 78,2 | ***76,8*** | 81,3 | ***75,7*** | 78,5 |
| Illes Balears | 60,5 | ***59,0*** | ***58,8*** | 60,1 | 60,5 |
| Andalucía | 66,0 | ***65,7*** | 66,5 | ***62,9*** | 66,8 |
| Región de Murcia | 67,5 | ***65,0*** | 73,1 | ***63,0*** | 67,9 |

Source: Regional Innovation Scoreboard 2017 - Database

Table 4. French Regions. Regional Innovation Scoreboard 2017. Relative performance to EU in 2011

| | **RII2009** | **RII2011** | **RII2013** | **RII2015** | **RII2017** |
|---|---|---|---|---|---|
| EU28 | 97,3 | 100,0 | 101,5 | 101,9 | 102,6 |
| Île de France | 126,8 | 129,6 | 130,1 | 130,2 | 130,8 |
| Bassin Parisien | 88,4 | 95,9 | 95,7 | 96,5 | 97,3 |
| Nord - Pas-de-Calais | 87,9 | 94,4 | 97,7 | 99,0 | 101,4 |
| Est | 107,7 | 104,1 | 107,7 | 112,5 | ***110,9*** |
| Ouest | 97,4 | 98,2 | 99,8 | 102,9 | 104,5 |
| Sud-Ouest | 108,5 | 109,9 | 111,1 | 112,1 | 114,3 |
| Centre-Est | 113,4 | 117,6 | 120,0 | 124,7 | 125,9 |
| Méditerranée | 100,7 | 104,7 | 105,5 | 110,2 | ***105,7*** |

Source: Regional Innovation Scoreboard 2017 - Database

**Decentralized governance of innovation**

In the last two decades, the decentralization process has accelerated in practically all European States. A process with multiple variants (Ismeri Europe, 2010) has the practicality factor contributed by the Europeanization of national policies and the principle of subsidiarity. The latter has favoured a new and complex distribution of skills, which, following Tödtling and Trippl (2005: 1207), has three levels: regional, national and European. This is a change in governance, as indicated Borràs (2003), which links competitiveness, development and innovation, relating sustainable economic growth - advocated by the Europe 2020 Strategy - with the ability of regional economies to change and innovate. In this relationship, it is necessary to consider not only the current characteristics of the territory, but also the previous (historical) circumstances that have led to this situation (Boschma, 2008).

The first point to take into account is the degree of ***political-economic decentralization*** with which innovation policies will be addressed. Thus, France concluded with the Law Notre (2015)[2] a process of decentralization that had been carried out over more than three decades, beginning in 1982 with the recognition of the region as a territorial community. The law passed in 2015 does not imply a radical change in regional policies, but a redefinition of the competences assumed by the new regions. These have been reinforced and classified, incorporating the following: economic development, tourism, territorial planning, transport (assumed from January 1, 2017), education and teaching, vocational training and employment, environment and energy, housing and habitat, culture, sports, and health-social. According to the Commissariat Général à l'Égalité des Territoires (CGET), the new territorial organization seeks, rather than establishing a model, to provide all regions with the indispensable

[2] Law nº 2015-991 of August 7, 2015 on the new organization of the Republic. It constitutes the complement of the Law of territorial public action and of consolidation of the metropolis (Maptam) of January 27, 2014, and the Law relative to the delimitation of the regions of January 16, 2015. The three form what has been called Act III of decentralization.

instruments for economic development. Its objective will be to find the modality that best adapts to the socioeconomic characteristics of its territory, applying the principle of subsidiarity, which is proper to decentralization, and seeking, equally, a place in the globalized economy. On the contrary, Spain is a decentralized state, as indicated in Article 137 of the Constitution of 1978. Its territories are organized into Autonomous Communities, whose powers are included in Article 148 - expanded by the total transfer of competences in health and education -, while article 156 refers to "financial autonomy for the development and execution of their competences".

These differences translate into the fact that in the Spanish case the main agent in charge of designing, developing and managing innovation policies is the corresponding regional government, given that the corresponding development agencies and / or agencies will depend on it to a large extent. innovation such as subsidies and financial aid; while in the French regions they intervene with the regional council, the French investment bank and in some cases the chambers of commerce.

The second point is the ***regional innovation systems***, which, according to Asheim et al. (2015), can be of three types: a) endogenous: very linked to the characteristics of the territory; b) regional network systems: multilevel governance models; and c) "RIS directed", which are regionalized national innovation models. In our case, perhaps the second model predominates, although the French regions have less autonomy. To develop the objectives set by the CGET, including innovation, the French regions apply two types of programs[3], whose guidelines complement those made at the national level: 1) the Regional Scheme of Economic Development, Innovation and Internationalization (SRDEII - Schéma Régional de Développement Économique, d'Innovation et d'Internationalisation), which defines the guidelines on business aid, support for internationalization, and aid for real estate investment and business innovation; 2) the Regional Higher Education, Research and Innovation Scheme, 2017-2021 (SRESRI - Schéma Régional de l'Enseignement Supérieur, de la Recherche et de l'Innovation).

In the case of Spain, regional governments establish their own development and innovation plans without a pre-established model by the national government. There is a great variety not only in the approach, since the economic characteristics of each territory are taken into account, but also in the temporal extension of the plans (Table 5). In some cases, such as the innovation strategy of Cantabria or the industrial plan of the Balearic Islands, the horizon of the objectives extends beyond the current programming period of European funds. In other cases, such as in the Community of Castilla y León, the plans show a broad previous route, that is, they are territories in which the objective of innovation was established in the 90s of the last century.

Table 1. Plans of development and innovation of the Autonomous Communities

| REGION | POLICY DOCUMENT |
|---|---|
| Galicia | Competitiveness Agenda Galicia Industry 4.0<br>PLAN GALICIA INNOVA 2020<br>Strategic Plan for Galicia 2015-2020 |
| Asturias | Science, Technology and Innovation Plan (STIP) 2013-2017 |
| Cantabria | Future factories plan<br>Innovation strategy 2016-2030 |
| País Vasco | Basque Industry 4.0 - Advanced Manufacturing Strategy<br>Science, Technology and Innovation Plan - PCTI EUSKADI 2020<br>The Industrialisation Plan 2017-2020 "Basque Industry 4.0" |
| Navarra | Science, Technology and Innovation Plan 2017 - 2020 |
| La Rioja | Plan of Industrial Development of La Rioja 2017-2020<br>Plan RTDI La Rioja 2017-2020<br>V Plan RDI La Rioja 2017-2020 |

[3] Although not directly linked to innovation policies, the Regional Scheme for the Organization of Sustainable Development and Equality of Territories (SRADDET – Schéma Régional d'Aménagement, Développement Durable et d'Égalité des Territoires), incorporated in the Law Notre , has as an added value its transversal character and its contribution to the territorial coherence of the great regional groups. It allows taking into account the interdependence of the thematic areas of intervention, that is, mobility, ecological coherence, climatic and energy challenges, and the prevention of waste

| | |
|---|---|
| Aragón | Aragón Industry 4.0 (AI4.0)<br>Economic and industrial promotion strategy of Aragon 2017-2019 |
| Madrid | VI Regional Plan for Scientific Research and Technological Innovation 2016-2020 |
| Castilla y León | III Framework Agreement for Industrial Competitiveness and Innovation 2014-2020 of Castile-Leon |
| Castilla-La Mancha | - |
| Extremadura | EXTREMADURA 2030: Strategy for green and circular economy<br>Extremadura Industrial Strategy 2014-2020<br>VI Regional Research, Development and Innovation Plan of Extremadura (2017-2020) |
| Cataluña | Catalan Agreement for Industry<br>Catalan Agreement for Research and Innovation 2008-2020 (PNRI)<br>Catalonia 2020 Strategy (ECAT 2020)<br>Digital Agenda for Catalonia 2020 (ADCAT 2020) |
| Comunidad Valenciana | Strategic Plan of the Industry in Valencia (PEIV)<br>Strategy of Industrial Policy 2020 Vision (EPI V-2020)<br>Strategy of Industrial Policy 2020 Vision (EPI) |
| Illes Balears | Industrial Plan Illes Balears 2018-2025<br>Plan of Science, Technology and Innovation 2013-2017 |
| Andalucía | Andalusian Plan for Research, Development and Innovation (PAIDI 2020)<br>Industrial Strategy of Andalucía 2020 |
| Región de Murcia | Law 8/2007, April 23rd of Promotion and Coordination of Investigation, Technological Development and Innovation in the Region of Murcia |

Source: Regional Innovation Monitor Plus https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/

With regard to higher education, except the Basque Country, Navarra, Madrid, Andalusia and Murcia, public universities are presented as direct agents in innovation policies, emphasizing the fundamental factor of higher education and research. In the case of the Basque Country, the innovation agency (Orkestra - Basque Institute of Competitiveness) is managed by the University of Deusto, which has a private nature. Madrid, Andalusia and Murcia have organizations that incorporate universities into an exchange network together with other economic agents. They would be the Foundation for RDI Knowledge Madrid, which addresses aspects such as universities, entrepreneurs, Europe, scientific culture, and science and technology; the Andalusian Agency of Knowledge (AAC), linked to the Ministry of Economy, knowledge, companies and universities; and the Seneca Foundation, which is the Science and Technology Agency of the Region of Murcia.

Following the line of multi-level governance Tödtling and Trippl (2005) distinguish three levels, regional, national and European, according to the competences assumed. Levels that are interrelated, since the same authors affirm that regional innovation systems are not self-sufficient units but depend on both internal and external networks.

Regarding internal networks, we will refer both to the regional development and / or innovation agencies, as well as to the foundations and organizations destined to put in contact the different actors that intervene in innovation policies, that is, those that link universities, research centres and companies. It is not a static relationship, but by its very nature is called to change and evolution, depending on the degree of interdependencies with global innovation networks (Asheim et al., 2015: 2). With respect to the agencies, Prota, et al. (2012) distinguish between regional development agencies and regional innovation agencies, stating that the latter are closely linked to the regional government. They add that the decision to implement them is the last step of a process of raising awareness about the importance of innovation in the development of a territory: "It begins with the recognition of the importance of innovation for the economic development of a territory, continues with stronger regional commitment to RTDI, until there is the formulation of a specific innovation strategy and the creation of a specific body to realize it" (56-57). If we consider this argument, the regional innovation agencies are not predominant in the countries analysed. In Spain we would have the Galician Innovation Agency (GAIN), a public autonomous agency with its own legal personality, and attached to the Ministry of Economy, Economy and Industry; INNOBASQUE. Basque Innovation Agency, created in 2007 as a public-private foundation; and the Valencian Agència de la Innovación (AVI), which is a public autonomous agency. For its part, in France we find Grand Innove - Agence d'Innovation which is the

agency of the Grand Est region created in 2017; Transferts - Agence Régionale d'Innovation, which was created in 2005 as the Languedoc-Rousillon regional innovation agency and currently covers the entire Occitan region; and L'Agence régional Pays de la Loire - Territoires d'Innovation. This has changed its name to Solutions' & Co, and has been transformed into an economic development agency, which offers integral solutions to facilitate the development of companies and territories. This last example is the most numerous, agencies that incorporate an integrated vision of competitiveness, development and innovation. In France, the following would form part of this group: Dev'Up Center-Val de Loire - Innovation and economic development agency, Hauts-de-France Innovation Development (HDFID), Bretagne Development Innovation, Regional development and innovation agency - Nouvelle-Aquitaine, Madeeli, Regional Agency for economic development, exportation and innovation and Regional Development Agency (both in the Occitan region), Corsica Economic Development Agency (ADEC).

As for the Spanish regions, something similar happens, although in this case it is necessary to distinguish between public, private and mixed agencies, as shown in Table 6. We found private equity agencies in the case of Asturias, a Basque Country, Extremadura, Catalonia and Andalusia. Those that have both public and private financing are in Asturias, Basque Country, Aragón and Madrid.

Table 2. Development and innovation agencies in the Autonomous Communities

| **Region** | **Development or innovation agency** | | |
|---|---|---|---|
| | *Public* | *Private* | *Mixed* |
| Galicia | Galician Innovation Agency (GAIN)<br>IGAPE - Galician Institute for Economic Promotion<br>SERGAS - Galician Healthcare Service | | |
| Principado de Asturias | Foundation for the Promotion of Applied Scientific Research and Technology in Asturias (FICYT)<br>IDEPA - Institute of Economic Development of the Principado de Asturias | Network of Centres for Technological and Innovation Accompaniment for the Economic Development of Asturias (Network SAT) | European Business and Innovation Centre (BIC) |
| Cantabria | PCTCAN – Scientific and technological park of Cantabria<br>Regional Ministry of Innovation, Industry, Tourism and Trade of Cantabria's Government<br>SODERCAN - Society for Regional Development of Cantabria | | |
| País Vasco | IKERBASQUE. Basque Foundation for Science<br>SPRI - Basque Business Development Agency | Orkestra-Basque Institute of Competitiveness (University of Deusto) | INNOBASQUE-Basque Innovation Agency |
| Comunidad Foral de Navarra | Navarran European Business Innovation Centre (CEIN)<br>SODENA | ADItech Technology Corporation | |
| La Rioja | Agency for the Economic Development of La Rioja, ADER | | |
| Aragón | Aragon Agency for Research and Development, ARAID<br>Aragon Institute of Technology (ITAINNOVA) | | Zaragoza Logistics Center (ZLC) |
| Comunidad de Madrid | Foundation for RDI Knowledge Madrid | | Madrid Network |
| Castilla y León | ICE – Institute for Business Competitiveness | | |
| Castilla-La Mancha | | | |
| Extremadura | CICYTEX - Centre for Scientific and Technological Research of Extremadura<br>Extremadura Avante, SLU | Foundation for the science and technology development and Extremadura Science and Technology Park | |
| Cataluña | ACCIÓ - Agency for business competitiveness<br>AGAUR - Agency for Management of University and Research Grants<br>CERCA Institute – Research Centres of Catalonia | FCRi – Catalan Foundation for Research and Innovation | |
| Comunidad Valenciana | Agència Valenciana de la Innovació, AVI (Innovation Agency for the Valencian Region)<br>Valencian Institute of Business Competitiveness (IVACE) | | |

| | | | |
|---|---|---|---|
| Illes Balears | Centre Balears Europe, CBE<br>Foundation Bit - Fundació Balear d'Innovació i Tecnología<br>Institute for Business Innovation Illes Balears, IDI | | |
| Andalucía | Andalusian Agency of Knowledge (AAC)<br>Innovation and Development Agency of Andalusia (IDEA Agency) | Technological Corporation of Andalusia | |
| Región de Murcia | Agrarian and Food Research & Development Institute of Murcia<br>INFO - Institute for the Promotion of the region of Murcia<br>Seneca Foundation | | |

Source: Regional Innovation Monitor Plus https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/

As far as external networks are concerned, some regions of both countries participate in projects with other Member States. Thus, Castilla y León, the Basque Country, Hauts-de-France and Provence-Alpes-Côte d'Azur are part of the Know-Hub Project[4], while Catalonia, the Basque Country, the Principality of Asturias, Cantabria, Galicia, Navarra, the Pays de the Loire and Auvergne-Rhône-Alpes are integrated into the Vanguard Initiative[5]. Galicia is the only territory of our analysis that has an RIS3 that, integrated with the border region of Portugal, overlaps the existing Euroregion [Cross-Border Smart Specialization Strategy of Galicia - Northern Portugal (RIS3T)]. It is a space in which there is cultural and socioeconomic continuity beyond political and administrative borders.

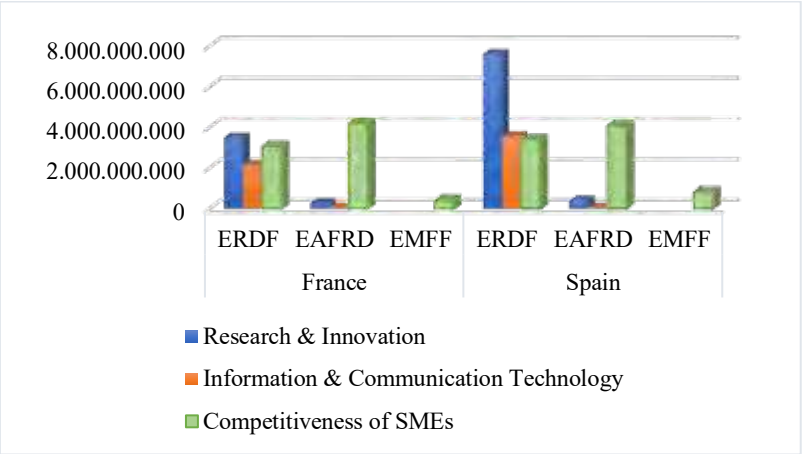
The third point of our analysis is ***the financing of innovation policies***. In the case of France, in addition to investments from BpiFrance, whose mission is to provide financial and technical support to companies in areas such as innovation, internationalization, creation and transfer of companies, the regions have so-called program-contracts State-Region (2015-2020). The Contracts include six essential axes (multimodal mobility, higher education, research and innovation, ecological and energy transformation, innovation and business, digital agenda, and territories) and a transversal priority (employment) linked to the objectives of the Europe 2020 Strategy. This investment translates into around 15.2 billion euros from the regions and a state contribution of about 14.3 billion. The amounts have been modified since the signatures of the contracts in 2015, due to the regional restructuring, since they included a revision clause expected from the autumn of 2016.

With regard to the Spanish regions, they have greater financial autonomy although they receive transfers from the State following the principle of solidarity that governs the Constitution. It must also be borne in mind that currently two models of regional financing coexist: on the one hand, the so-called common with own funds and the State, and the regional model (Basque Country and Navarre) with a collection of 100% of taxes and , therefore, greater spending autonomy. Although there are national frameworks in areas such as science and technology, the different economic capacity of the regions makes coherence between the different territories difficult[6].

Funding from the Structural Funds of the European Union constitutes an important part of the total. We have considered that innovation policies would include funds for research and innovation, information and communication technologies, and competitiveness of small and medium-sized enterprises, which correspond to the first three thematic objectives established in the community regulations. Graph 2 shows the total amounts per country approved for the 2014-2020 programming period, with the highest percentage corresponding to the European Regional Development Fund, followed by the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund.

[4] http://www.know-hub.eu/
[5] https://www.s3vanguardinitiative.eu/
[6] For the analysis of innovation in the previous programming period (2007-2013), see Faíña, A., López-Rodríguez, J., Montes-Sola, P., and Pol, A. 2010. Expert evaluation network delivering policy analysis on the performance of Cohesion policy 2007-2013.

Graph 2. European investment funds by thematic objectives




Source: https://cohesiondata.ec.europa.eu/

## Conclusions

After the revision of the indexes, and the development and management of innovation policies in the different regions, we can draw some general conclusions. In the first place, innovation policies could not only provide positive elements of territorial development and articulation, but also some negative effects that would have to be corrected in the design of these. They could favour territorial disparity, especially in the most disadvantaged regions that have less capacity to absorb the funds allocated to innovation, consolidating the so-called innovation paradox. On the other hand, if there is no strategy that takes into account the neighbouring regions, the development of innovation in a specific territory could cause negative externalities in neighbouring regions, such as the abandonment of rural areas, the brain drain, the loss of business fabric, among others. However, we must not forget that the innovation policy could contribute positively in the consolidation of the territorial aspect of cohesion, favouring the relationship between the different spaces -or new functional territories- and articulating the territory. In its incorporation to the reform of the cohesion policy, the policy of innovation and the intelligent specialization of the territories are just one more element. It is necessary to consider the whole and take into account other aspects and problems linked to institutions, governance, cross-border cooperation and limitations in the capacity to absorb investments (MacCann and Ortega-Argilés, 2015: 1300).

Secondly, the analysis of the French and Spanish regions shows common features defined by European regulations, but also important differences derived from their political and socio-economic trajectory (past and present), as well as geographic and spatial characteristics. In the position of the Autonomous Communities regarding innovation, several factors seem to contribute, although it is not always possible to apply a common guideline. Thus, for example, the case of the Basque Country -the most outstanding territory in innovation- has a financing model (regional) that favours the full management of income and expenses. However, Navarre - which shares a border and financing model - is characterized as a moderate innovator. The defining elements seem to be precise in the historical and socioeconomic trajectory. This reaffirms the theory that regional innovation policies cannot be unique but must be defined based on the characteristics of each territory. The way of designing and applying the development and innovation plans has a lot to do with the trajectory related to the regional cohesion policy since the accession of Spain in 1986. In the French case we would highlight the close link between innovation, economic development and territorial planning through the two schemes designed at the national level but adjusted to the specific characteristics through regional governments. The regional transformation culminated with the Notre Law has established a model that starts with a

vocation of balance between the spaces that make up the new regions, applying the principle of subsidiarity to the management of policies.

Finally, it could be asked whether overcoming the aforementioned differences and the diverse capacity to face the challenge of innovation requires the creation of functional territories that overcome the administrative barriers of regional boundaries. The coordination of efforts not to duplicate them and achieve more beneficial results for all actors goes through a multilevel governance in which regional plans and national and European guidelines are articulated.

**References**


Annoni P., Dijkstra, L., and Gargano, N. 2017, The EU Regional Competitiveness Index 2016. DG for Urban and Regional Policy, Working Papers WP02/2017.

Asheim, B. T., Grillitsch, M., and Trippl, M. 2015, Regional innovation systems: Past–present–future. Papers in Innovation Studies, 2015/36.

Barca, F. 2009, An Agenda for a Reformed Cohesion Policy, European Commission.

Bevilacqua, C. et al. 2015/2017, Smart specialisation strategy: The territorial dimension of research and innovation regional policies. Conference Paper.

Borràs, S. 2003, The innovation policy of the European Union: From Government to Governance. London: Edward Elgar Publishing.

Boschma, R. 2008, Constructing regional advantage: related variety and regional innovation policy. Report for the Dutch Scientific Council for Government Policy. University of Utrecht.

Dijkstra, L., Garcilazo, E., and McCann, Ph. 2013, The Economic Performance of European Cities and City Regions: Myths and Realities. European Planning Studies, 21 (3), 334-354.

European Commission, 2018, European Innovation Scoreboard 2018. Luxembourg: Publications Office of the European Union.

European Commission, 2010, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions COM(2010) 553 final. Regional Policy Contributing to smart growth in Europe 2020.

Fritsch, M., and Graf, H., 2011, How sub-national conditions affect regional innovation systems: The case of the two Germanys. Papers in Regional Science, 90 (2), 331-353.

Hassink, R., and Marques, P., 2015, The Regional Innovation Paradox. Revisited from: Routledge Handbook of Politics and Technology Routledge. Accessed on: https://www.routledgehandbooks.com/doi/10.4324/9781315725239.ch8

ISMERI EUROPA and APPLICA, 2010, Distribution of Competences in relation to Regional Development Policies in the Member States of the European Union. Final Report. https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/2010_distribution_competence.pdf

McCann, Ph., and Ortega-Argilés, R., 2015, Smart Specialization, Regional Growth and Applications to European Union Cohesion Policy. Regional Studies, 49 (8), 1291-1302.

Morisson, A., and Doussineau, M., 2019, Regional innovation governance and place-based policies: design, implementation and implications. Regional Studies, Regional Science, 6 (1), 101-106 https://doi.org/10.1080/21681376.2019.1578257

Navarro Arancegui, M., Aranguren Querejeta, M.J., and Magro Montero, E., 2012, Las estrategias de especialización inteligente: una estrategia territorial para las regiones. Cuadernos de Gestión, 23, 27-49.

Oughton, C., Landabaso, M. and Morgan, K., 2002, The regional innovation paradox: innovation policy and industrial policy. Journal of Technology Transfer, 27, 97-110.

Prota, F., Fiore, A., and Grisorio, M. J., 2012, The regional innovation agencies in Europe: a comparative analysis. In book: Regional Development Agencies: The Next Generation. Networking, Knowledge and Regional Change Publisher: Routledge Editors: Bellini N, Danson M, Halkier H.

Regional Innovation Monitor Plus https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/

Regulation (EU) No 1301/2013 of the European Parliament and of the Council of 17 December 2013 on the European Regional Development Fund and on specific provisions concerning the Investment for growth and jobs goal and repealing Regulation (EC) No 1080/2006.

Sabatino, M. and Talamo, G., 2017, Innovation and Competitiveness of European Regions. Research in Applied Economics, 9 (3), 45-69.

Tödtling, F., and Trippl, M., 2005, One Size fits all? Towards a differential regional innovation policy approach. Research Policy, 34, 1203-1219.