A bibliometric analysis on the territorial governance of innovation: Scopus database (2018-2023)

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Abstract:

This article suggests a contribution to the literature on territorial governance through the study of a local partnership or collaborative mode of action to support innovation, an innovation policy. Our fundamental question can therefore be formulated as follows: How can territorial governance contribute to fostering the dynamics of innovation?

The methodology used for the theoretical analysis was descriptive, the research work was carried out on the Scopus platform database, obtaining specific information from 39 scientific productions, a more or less significant number for the subject addressed, which was subjected to a bibliometric study that allowed us to note that the growth in publications from 2018 to 2023 has had a significant increase, which allows us to deduce that this subject is becoming increasingly important and attractive to those concerned because of its importance in territorial development. In fact, we found that France leads the ranking with 6 scientific productions, and the scientific field that stands out most in the publications is that of management sciences and commerce.

In the same perspective, visualization via figures and sectors was mobilized in order to obtain the study cartography of the theme of the territorial governance of innovation. Based on the in-depth theoretical analysis, the theories relating to the paradigms of this theme were analyzed, which enabled us to better understand that collaborative actions at the level of territorial governance (regions, industrial districts, etc.) favour innovation. According to this bibliometric analysis, we find that appropriate governance based on collaboration and partnership improves the dynamics of innovation activities, whereas private hierarchical governance generates conflicts between participants, which has a negative impact on the dynamics of innovation.

Key words: Territorial governance, Innovation, territorial governance, local partnership and bibliometric study.

Introduction

Since the 1990s, in order to take note of the changes in local and regional action at its various levels, the concepts of governance, such as multi-level governance, urban, territorial or even metropolitan governance, have been commonly used. Speaking of governance rather than government refers to a change in the role of the state, which now intervenes in a less direct and hierarchical way and plays more of a regulatory role. The notion of territorial governance highlights the increased reference to territorial boundaries other than national, in this case regional and urban, in the exercise of political steering of collective action, as well as the increased capacity of cities to free themselves from the orientations and resources of the State. The literature on territorial governance is generally concerned to analyze contemporary forms of local public action without overestimating the weight of horizontal coordination logics (the agency of actors at local level) compared with vertical coordination logics (the structuring effect of state institutions and instruments).

The aim of this article is to contribute to the study of territorial governance and its role in improving and stimulating innovation, by providing a new theoretical perspective and a specific analysis grid via a bibliometric analysis. Our fundamental question can therefore be formulated as follows: **How can territorial governance contribute to fostering the dynamics of innovation?** Theoretically, the aim is to focus on local governance based on a collaborative and shared vision, and that of innovation and more particularly on a partnership type of intervention. According to modern literature, cooperative actions at governance level have a considerable effect on the dynamics of innovation activity at territorial level (regions, local authorities, entrepreneurial ecosystems, etc.). They aim to develop the comparative advantage of territories by forming local groups of players who are the bearers of innovations that can be exploited on the market. The various levels of government are called upon to pool their efforts around common, shared strategies for local competitiveness, and to encourage scientific and industrial players to step up their exchanges of knowledge and tacit know-how.

The article is divided into three sections. The first section focuses on the institutional approach to innovation. In this section, we will look at the regional and national innovation system on the one hand, and the territorial governance of innovation on the other. In the second section, we will present the research methodology and in the final section, we will analyze and discuss the results obtained.

I. The institutionalist approach to innovation

This is a theoretical approach to innovation based on institutions, highlighting the interactive nature of the innovation process. Contemporary institutionalists wanted to obtain a more accurate understanding of the phenomena associated with the networking of companies and the collaboration between the various institutional players in the creation of new knowledge. For institutionalists, there is no doubt that the production of innovations takes place within an interactive system constructed by all the players belonging to the institutional spheres (Therrien, 2005). Hall and Taylor (1997) divided institutionalism into three main strands: historical institutionalism, rational choice institutionalism and sociological institutionalism. It is sociological institutionalism, with organization theory and cognitivism as the basis of individual choice, which inspires analyses of innovation systems (Bruno, 2003).

The innovation system approach is part of evolutionary economics. Nelson and Winter's (2009) An Evolutionary Theory of Economic Change (1982) can be seen as the founding work of this school of thought. The aim of the evolutionary school is to explain the changes affecting companies and the mechanisms of innovation. Each company contains a set of rules called routines which determine its performance according to the type of activity and guide its technological trajectory. For the most part, these routines are specific to each company and relatively informal (tacit), and their evolution explains the trajectories followed by companies. The decisions taken by managers and the knowledge held by employees may be adapted to market developments or, on the contrary, may be inappropriate. With each new cycle of innovation, some companies disappear and others are created: there is a form of selection of routines by the market. The two principles of internal routines and market selection make it possible to consider the overall economic dynamic. Evolutionary economists also put forward the concept of path dependence, which expresses the idea that the performance and trajectories of firms are largely a function of their particular history and the routines they have accumulated. Thus, a choice made at time t (for example, the adoption of a certain technological standard) will condition the future development of a certain number of organizational routines and therefore the company's future strategic choices.

With the institutionalist approach, the study of technological innovations changes paradigm, moving from a linear approach to an interactive one in which institutions acquire predominant importance: it is then possible to speak of innovation systems (Therrien, 2005). In this logic, innovation is conceived as the result of a social process, involving the interaction of players belonging to various environments or institutions (universities, private or public research centers, financial institutions, companies, governments and the labor market).

The system is therefore gradually built up by the players themselves. The innovation process can be described as the successful construction of a system of interactions, referred to as an ecosystem. It is a system of players with multiple interactions that creates value for each of its members and for its environment (Assielou, N., and others, 2008). According to the authors, « the bearer of an innovative idea needs to establish positive relationships with providers of complementary skills, advisers, financiers and other players capable of helping him to develop, finalize and implement his idea, make it known, reach potential customers and convince them. Once the innovation is on the market, its resistance to competitors' counter-attacks will largely depend on the ecosystem that has been built up around it ».

One approach belonging to the institutionalist perspective is that of the «innovation system». Lundvall distinguishes between two different conceptions of innovation systems (Bengt-Åke, 2010):
- The narrow fundamentalist conception is limited to the fields of science, research, technology and in some cases education. The narrow conception takes as its object of study only the scientific system of technology, and explicitly considers the determinants and consequences of innovation to be outside its scope. The advantage of this restriction is a gain in precision in the analysis (detailed study of the institutional and organizational architecture of innovation systems).
- The broad conception of the innovation system extends to all the economic and institutional structures that affect the production system. In this case, there is a more or less extensive interpretation of the system, including culture, customs, national traditions, legislation, etc.

Innovation systems perform the following functions in the economic and social development of regions, and all these functions influence each other (Marko, 2007):
- The development of knowledge, the raw material for individual and collective innovation processes.
- The dissemination of knowledge through the market and networks of players.
- The ability to mobilize human and financial resources.
- Development of the relationship between the innovation process and the market (economic valorization of knowledge).
- Improving the ability of governance to provide overall direction.

The concept of innovation system is mainly used to study national innovation systems, but there are also special approaches to innovation systems (Nelson, 1993): regional innovation systems (Saxenian, 1996), which are the application of NIS to a smaller area, and sectoral innovation systems, which will be discussed in the following

1.1. The national innovation system

The term was introduced into the literature by the author Freeman (1989) at the end of the 1980s, when he published his study of innovation in Japan. Innovation was first and foremost a matter for companies, but companies did not innovate in a vacuum. They would interact with other companies, universities, government bodies, suppliers, customers and so on. It would therefore be all these players and their interactions that would constitute the national innovation system (CCST, 1998). This system would comprise three levels, i.e. three spheres of involvement, within which the players differ from one level to the next. There is the level of the innovative company, the level of the immediate environment (alliances, collaborations and networks) and finally the level of the global environment (framework conditions, OCDE, 1997), which, combined, form an innovation system taking root at the level of the Nation-State.

The national innovation system has been defined in several ways in the literature. However, the definition proposed by Lundvall himself is the best known. He defines the national innovation system as: « The elements and relationships that are mutually involved in the production, dissemination and use of new and economically useful knowledge [...] and that are located within a nation state » (Bengt-Ãke, 2010). A country's capacity for innovation depends to a large extent on the way in which players are linked together as part of a collective knowledge creation system. These actors are mainly private companies, universities and public research institutes and the people within them.

Links can take the form of joint research, staff exchanges, cross-patents, equipment purchases and a variety of other channels. There is no single accepted definition of a national innovation system (OECD, 1997). Following Bengt-Ãke's (2010) work on the national innovation system, a number of similar studies of the innovation process have been carried out since the 1990s, in disciplines as varied as geography, sociology and economics. New conceptual models derived from the NIS have gradually emerged in parallel to capture the interactive nature of innovation, but by adjusting the angle of analysis towards other levels of the economy. Thus the literature on the local innovation system, the theoretical equivalent of the NIS at the regional level, grew rapidly during the 1990s, encouraging a renewed focus on regional development (Malmberg and Maskell, 1997).

1.2. The regional innovation system

A regional innovation system is a set of players and resources that interact effectively to encourage innovation in the region. Such a system makes it possible, among other things, to optimise the transfer of skills and collaboration between the various players involved in regional development. The main innovation players in the region are (Prager, 2008):

- **Knowledge producers**: the « producers » of knowledge are the university laboratories, public research bodies and private R&D centers located in the region. To assess the dynamics of innovation, we need to look at:
  - ✓ The assessment made by the heads of the centers on the indicative size of the percentage of researchers maintaining close links with SMEs.
  - ✓ Links with foreign countries, as the international opening up of innovation systems is an asset and it is useful to encourage knowledge producers to have a policy of extra-regional influence.
  - ✓ The policy followed by the organization to develop its relations with SMEs, its methods, its quantitative targets if applicable, and the resources planned to achieve this.
  - ✓ The organization's international ranking according to the criterion of publication referenced by discipline.

- **Knowledge transfer and dissemination bodies**: The transfer and dissemination of knowledge is varied in nature and purpose; a distinction is made between technology transfer bodies in the strict sense (public or private technology transfer centers, incubators, science park management teams, etc.) and the information or consultancy bodies required for innovation (patent consultants, technology consultants, strategic consultants, technology watch, etc.). It should be emphasized that there is a distinction between transfer and dissemination depending on the maturity of the technology (and more generally the knowledge) involved: a research laboratory transfers technology, whereas a dissemination organization provides a company with access to and use of a proven technology.

- **Demand for innovation and knowledge**: the needs of businesses for innovation support and services are an essential basis for assessing the needs of the innovation system. It will be useful to carry out surveys on the needs of SMEs in the region and on the way in which these needs are met by the existing offer (in the region and outside) both by knowledge "producers" and by various knowledge transfer and consultancy organizations (technological consultancy, technical testing, consultancy on patents, design, organization, quality assurance, marketing services, business intelligence, etc.).

- **Financial organizations**: the ability to finance the creation and development of innovative businesses is one of the determining factors in a region's capacity for development and innovation. Financial intermediaries can play a major role, going beyond their direct role in arranging financing. They can act at different levels, as shown by the analysis of the innovation system in Silicon

Valley, a world benchmark in this field: exerting permanent pressure on researchers to encourage them to exploit their discoveries, supporting business creators in setting up their projects and managing their companies. A varied and dynamic network of financial intermediaries, in strong competition with each other, appears to be one of the determining factors in a region's capacity for development and innovation.

Public support measures are certainly a way of lowering the requirements of capital providers, but it is essential to increase the number of local intermediaries at the same time to reduce information asymmetries between funders and project sponsors. A list of venture capital and innovation financing organizations, an inventory of the human resources they have at their disposal, and a count of their operations, both in terms of volume and the number of companies involved, is a minimum requirement for formulating a comparative assessment of the scale of the existing fabric. The diagnosis will benefit from being enriched by additional studies on actual access to equity financing for innovators; this will require additional surveys of the companies concerned, particularly those that have failed in their start-up and development projects.

In the light of the literature on the regional innovation system, we have attempted to draw up a diagram which:
- Identifies the main innovation players in the system
- Explains the links and nature of the flows between the players
- Explains how innovation works, and the major elements in the system's dynamics.

Each region has its own particular strengths, which need to be focused on as a priority in order to build a strong economic identity, which is necessary in the face of international competition, and to avoid dispersing resources at the cost of fruitless public action. Regional authorities therefore need to prioritize the actions to be taken, focusing on the region's strengths and major weaknesses. Regional leaders are faced with the challenge of mobilizing their resources to ensure the region's economic prosperity and to ensure that its assets are recognized as scarce resources in global competition (Prager, 2008).

Regional differentiation strategies benefit from being based on clusters of activity and on the region's key scientific or technological skills. The aim is to focus on the clusters or scientific niches that will generate the most business for the region in the long term, and to give these clusters and niches the resources they need to develop effectively in the international context (Prager, 2008). The SRI-SI (Research and Innovation Strategies for Intelligent Specialization) is a process of discovery that should lead the region to economic transformation. This involves meeting 4 conditions (Godin, 2013):

- Making (difficult) choices: selecting a limited number of regional priorities to specialize in a context of globalization.
- Identify the region's comparative/competitive advantages (strengths/weaknesses): mobilize R&D potential (infrastructure, skills) and industrial potential to match market needs and capacities; cooperate with other regions.

- Seeking critical mass: developing links between existing sectors in the region to enable diversification into specialist areas; building on activities anchored in the region to move towards others with higher added value;

- Promoting partnerships: organizing innovation systems with partners from the "quadruple helix": universities and research centers, businesses, the public sector and civil society. Given the heterogeneity of these players, the question arises as to the proper governance of collaborative innovation projects.

1.3. Territorial governance of innovation

The issue of territorial governance is first and foremost linked to that of local development and is situated in the historical context of the growing involvement of local players (private, public, voluntary) in development processes and in their ability to mobilize and take charge of their own affairs (Leloup, 2005). According to Michael Enright, the structure of governance refers to the nature of relations in terms of the distribution of power (Enright, 2000).

Territorial governance is based both on the network and on flows; a network being a configuration of connections between the various players with flows circulating within the network. These flows are information induced by a common strategy due to the existence of an institutional proximity and finally of a clear spatial delimitation, constituted by the exercise of a geographical proximity. What will establish the dimensions of the network based on geographical proximity and institutional proximity are two processes: on the one hand, the identification of a shared problem and the search for a solution through cooperative coordination, and on the other, a process of transforming hidden or even virtual resources into specific assets (Leloup, 2005).

Territorial governance can be defined as a dynamic process of coordination (hierarchy, conflict, consultation) between players with multiple identities and asymmetrical resources in the broadest sense (powers, relationships, knowledge, status, financial capital) around territorial issues aimed at the collective construction of an objective, by implementing multiple mechanisms (arrangement of procedures, measures, knowledge, know-how and diversified information) based on collective learning and participating in institutional and organizational innovations within territories (Rey-Valette, 2010).

For Mendez and Mercier (2006), local or territorial governance is defined as « a process of confrontation and adjustment of both systems of representation and the actions of groups of actors who are geographically close but who may come from different organizational and institutional fields, with a view to implementing a local development project ». Territorial governance is a real challenge for the development of public policies. Good public governance of innovation is the ability of regional leaders to correctly characterize the major challenges to the region's competitiveness and to define the priorities for action that are best suited to making the most of their resources (Prager, 2008).

Public action must reconcile two imperatives (Mendez and Mercier, 2006):
- The ability to determine a limited number of well-targeted priorities in order to be effective.
- The ability to create a consensus around strong visions and these priorities.

We can accept that each region is irrefutably a special case because of the almost infinite combination of variables at play in it, calling for a particular form of governance. Typologies do exist, however, which highlight a relatively small number of models depending on the type of key player who dominates the process. Gilly and Perrat (2003) identify three main theoretical types, depending on the type of player who dominates territorial coordination: private, institutional or public and mixed governance:

Private governance corresponds to the case where an organization (an R&D centre, a business association, a leading firm, etc.) is the key player in the stakeholder coordination process. Institutional or public governance is where one or more institutions (a local authority, the State, a public research center, etc.) play the role of the main coordinator of the players in an area. In reality, these « pure » types are rarely encountered, and more often than not we find a combination of the previous forms, in which case we speak of mixed or partnership governance. « Governance is therefore not a configuration of strictly economic or strictly socio-political coordination: it is a combination of these two dimensions ».

In the institutionalist approach, innovation is seen as an alchemy that "runs through institutions, weaving complicated and unexpected relationships between different spheres of activity, involving personal relationships, the market, the law, science and technology" (Callon, 1999). From this perspective, innovation is not seen as « an individual adventure but (as) collective work (...) synonymous with networking » (Plociniczak, 2002).

II. Research methodology

This research work is carried out in two main stages: the first stage reflects the bibliometric analysis of the concept of territorial governance and its role in stimulating innovation activity, and the second focuses on an in-depth and methodical review of the literature on the phenomenon addressed, discussing the most important results.

In bibliometric analysis, bibliometric indicators are used to provide quantitative information during the evaluation process in order to carry out an objective and concrete evaluation. In fact, these indicators are information of a numerical nature with calculations based on bibliographic characteristics dealt with in the literature that is published in academic and scientific circles, thus making it possible to examine various characteristics of the scientific task, which are associated with both the production and consumption of data. For Palomares and Chesvit (2019), bibliometric is determined by a strict rigour since research has a specific goal, a concrete study tactic that involves the systematic or well-organized identification of data that can be exploited in research.

This type of methodology is being used more and more to analyze the state of the subjects covered, making it possible to detect the categories of study in which researchers dominate, the most prominent authors, the areas of expertise in which they are interested, the countries in which research is fairly well developed, and the types of publication of authors and their institutional affiliations.

To carry out a bibliometric study, a fairly large quantity of bibliographic data is very important. In general, a solid base of bibliographic information is mobilized for this purpose. These information bases are made up of a panoply of records containing bibliographic data such as the title of the contribution, the author concerned, the type of publication and its date, the publisher, etc.), stored and administered by highly advanced computer systems.

In order to assess the state of research on the territorial governance of innovation, it is important to have a vast bibliographical database available for bibliometric examination. Generally speaking, a bibliographic information base is mobilized. A solid, rich database generally consists of a panoply of records containing bibliographic data.

Depending on the approach used for the subject addressed and taking into account the bibliometric mobilization in other research, we considered the Scopus information base, in which the theme of territorial governance and its role in improving innovation activities is analyzed, exploiting the study argument for the survey. The search system used is «Title-Abs-Key», in our case «Governance and Territory», and «Title-Abs-Key», in our case «Innovation», and applied in June 2023.

The search process identified 39 scientific productions, which were downloaded and subjected to a bibliometric examination, taking into account the categories of authors. In fact, the following categories were taken into consideration: by institution, country, author, country, type of publication, years of publication, source, field of application and also in the mapping of the study, highlighting terms such as urban governance, innovation systems, multi-level governance, social innovation, governance of territories, partnership governance, among others, which are associated with the subject addressed.

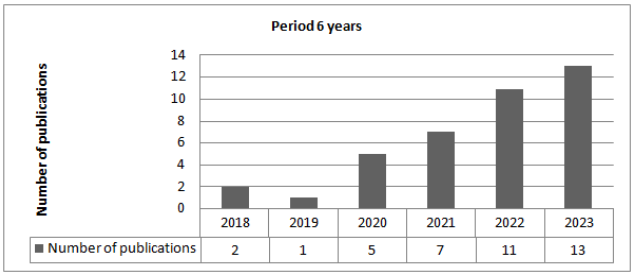
The information gathered was exported in a comma-delimited format, which enabled us to incorporate the data into the Vos-Viewer program, with which the co-occurrence of keywords was studied, as an exploration of the theme related to the territorial governance of innovation.

In the same perspective, we analyzed the statistics generated by the authors, in which only one author appears with two publications, the other authors having only one publication. By country, we noted that in France, there were six publications; in Spain and China, there were five publications; in Brazil, Germany and Colombia, there were three publications; in Italy, the UK and the USA, there were two publications; in Argentina, Sweden, Latvia, Albania, South Korea, Canada, Romania and Greece, there was a single publication. We note that Cities Journal had eight publications, Journal Rural Studies had five publications, Land Use Policy had four publications, Geoforum, Journal of Cleaner Production and Environmental Science and Policy had three publications, while the remaining 15 sources had only one publication. For the most effective analytical processing of scientific documents and information, a reading of the full text was carried out, which made it possible to detect categories such as theoretical models, theoretical approaches to the studied phenomenon, tools and factors for influencing territorial governance applied to innovation.

III. Analysis and discussion of results

Bibliometric analysis, as shown below, has enabled us to identify 39 research studies focusing on territorial innovation governance over the last six years (2018-2023). As shown in Figure 1, publications in this field have grown very significantly, from two publications in 2018 to five publications in 2020, and from five in 2020 to thirteen in 2023, an average increase of 6.5 publications per year over the last six years.

Figure 1: The evolution of the number of publications over the last 6 years



Source: elaborated by the authors

In the same vein, Table 1 shows publications by institution. In fact, two publications were published respectively in 2022 and 2023 by the Federal University of São Carlos in the international journal of Rural Studies, and the remaining 37 publications were published by each university (i.e. each institution published a single publication), as shown below:

Table 1: Publications by establishment

University/Establishments	Number of publications	University/Establishments	Number of publications
Federal University of São Carlos	2	University of Córdoba	1
University of Santiago de Compostela	1	School of Social Sciences	1
Doctoral School of Geography of Paris	1	INRAE UR France	1
Clersé-University of Lille	1	University of Santander	1
Jorge Tadeo Lozano University	1	University of Valencia	1
Institute of Geography	1	Science and Technology of Paraíba	1
University of Deusto	1	Heidelberg University	1
Beder University College	1	Zhengzhou University School of Management Engineering	1
Virginia Tech	1	School of Economics and Management China	1
The University of Manchester	1	Harvard Law School	1
University of Turin)	1	University of Exeter	1
Seoul National University	1	National Council for Scientific and Technical Research	1
Tongji University Shanghai	1	University of Bonn	1
Luiss University Rome	1	Baltic Studies Centre	1
Alexandru Ioan Cuza University of Iasi	1	Polytechnic University of Valencia	1
Laval University Quebec City	1	Swedish Geotechnical Institute	1
Federal University of Toulouse Midi-Pyrénées	1	University of, Colombia	1
Chinese Academy of Sciences Beijing	1	Dalian University of Technology	1
Paul Valéry University Saint Charles 2	1	University of Montpellier	1

Source: elaborated by the authors

The results of the second table below present the authors who have studied the territorial governance of innovation, we note that all the authors have published only one article:

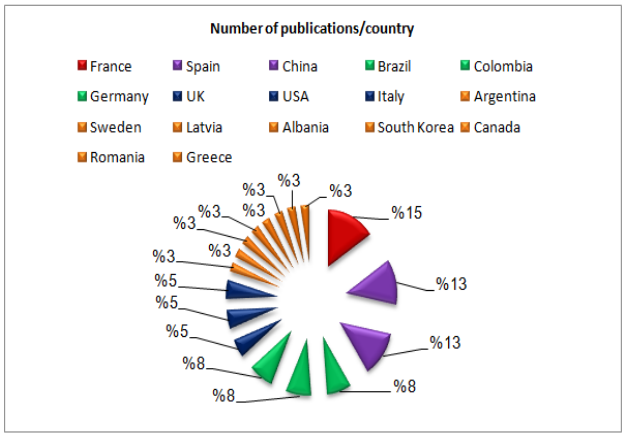
Table 2: Publications by author

Main authors	Number of publications	Main authors	Number of publications
Akimowicz, M…	1	Philippe Lavigne Delville…	1
Piñeiro-Anteloa, M…	1	Sarah Audouin…	1
Solène Rey-Coquais…	1	Liliana Reina-Usuga…	1
Céline Merlin-Brogniart…	1	Chatzichristos Georgios…	1
Camilo Torres…	1	R. Fèche…	1
Carola Wilhelm…	1	Claudia Jazmin Galeano-Barrera…	1
Edume Magro…	1	Jesús Peiró-Palomino…	1
Kriselda Sulcaj Gura…	1	Mirella Motta e Costa…	1
Damien Geffroy…	1	Denise Gutiérrez…	1
Bing Sun…	1	Elvis Kwame Ofori…	1
Chiara Certomà…	1	Tao Ge…	1
Charles Audouin…	1	Guanchi Zhang…	1
Hao Zhang…	1	M. Fortnam…	1
Luca Tricarico…	1	Pamela E. Degele…	1
Ema Corodescu-Rosca…	1	Asad Asadzadeh…	1
Hyppolite Dossa Dansou…	1	Talis Tisenkopfs…	1
Andréa Oliveira da Silva…	1	Edgar Lorenzo-Saez…	1
Yansui Liu…	1	Lisa Van Well…	1
Ivan Damasco Menzori…	1	Juan D. Suárez-Gómez…	1
Kai Song…	1		

Source: elaborated by the authors

In order to establish the place of origin (country) of research studies relating to the approach. As shown in Figure 2, France tops the list with six scientific publications (15%), followed by Spain and China with five (13 each), Brazil, Colombia and Germany with three (8% each), the UK, USA and Italy with two (5% each), and Argentina, Sweden, Latvia, Albania, South Korea, Canada, Romania and Greece with one publication each (3% each).

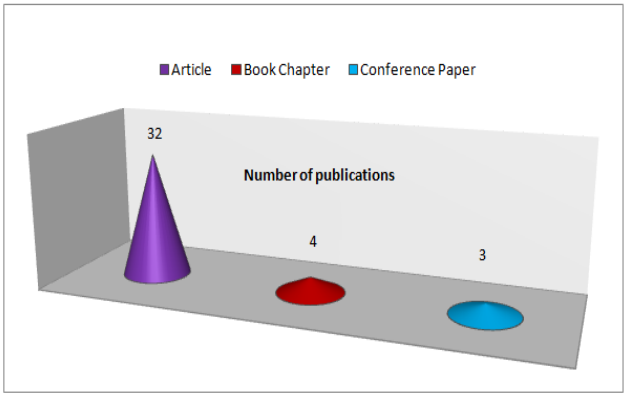
Figure *2: Number of surveys per country*



Source: elaborated by the authors

Figure 3 below shows us that scientific studies relating to the territorial governance of innovation have a publication ranking of 32 Scopus-indexed scientific articles, followed by 4 book chapters and 3 documents linked to international conferences, while the production of books remains elusive. In the following we will look at the types of publications indexed by Scopus.

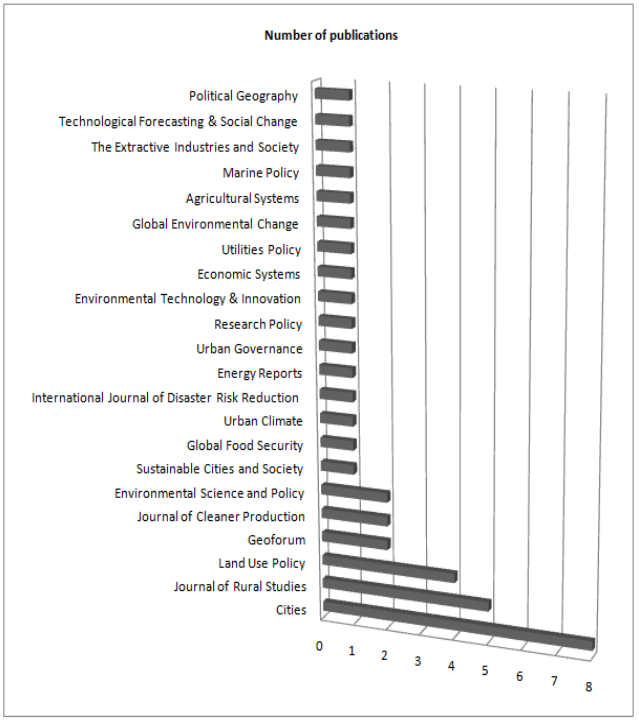
Figure 3: The main types of publications



Source: elaborated by the authors

The results received have enabled us to highlight the fact that the studies were only carried out in the form of scientific articles, which can be attributed to a limited approach to the research subject. Figure 4 shows the scientific output by source, with the journal Cities contributing 8 publications, followed by the Journal of Rural Studies with 5 publications, then Land Use Policy with 4 publications, Geoforum, Journal of Cleaner Production and Environmental Science and Policy with 2 publications each, and finally the other journals with just one publication each.

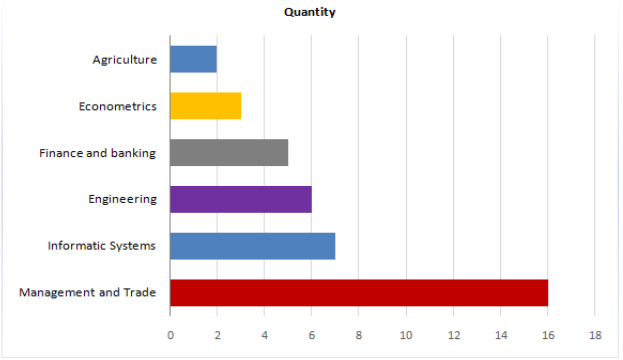
Figure 4: Main sources according to the Scopus database



Source: elaborated by the authors

With regard to the field of application in which the scientific publications were developed, Figure 5 shows that the field of Management and Trade stands out with 16 scientific publications, followed by Informatics Systems with 7 publications, Engineering with 6 publications, Finance and Banking with 5 scientific publications, Econometrics with 3 publications and finally Agriculture with 2 scientific publications.

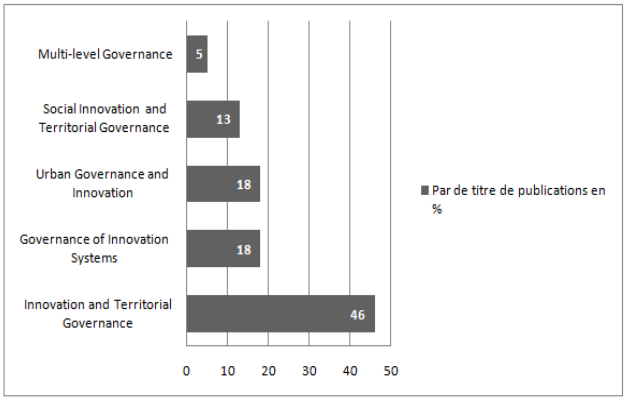
Figure 5: Main sources according to the Scopus database



Source: elaborated by the authors

The literature review obtained can be grouped into five sections, in which it emerges that innovation and territorial governance is at the top of the ranking with a percentage of 46% (18 scientific productions), followed simultaneously by Governance of Innovation Systems and Urban Governance and Innovation with a percentage of 18% for each (7 scientific productions for each), Social Innovation and Territorial Governance with a percentage of 13% (5 scientific productions), and finally, we find Multi-level Governance with a percentage of 5% (2 scientific productions). This shows that the key words of our research study are addressed in a fairly significant way to a lesser extent.

Figure 6: Breakdown of research keywords among the 39 scientific publications



Source: elaborated by the authors

The theoretical analysis is essentially based on the study of the relationship between territorial governance and innovation. In fact, the bibliometric study is considered as an important tool that is used to better understand and deepen the research concepts, and also to organise and structure the information obtained in a relevant way in order to allow us to develop the topic addressed. On the other hand, although innovation and governance at territorial level have not evolved significantly in the past, over the last six years there has nevertheless been an improvement and coordination between the aspects selected in the analysis, which allows us to deepen and develop our knowledge in this sense and for which it is essential to examine the corresponding literature.

With regard to the implementation of innovation governance within territories (as in the case of regions, clusters or others), states that good governance in innovation territories must guarantee that the partnership or collaborative aspect can achieve the targeted objectives in terms of improving innovation. To achieve this, it is useful to include provisions that make territorial governance effective and an advantage with a dynamic and efficient innovation process. Good governance based on cooperation and partnership includes shared objectives, ethical values, innovative projects and clearly defined strategies.

In this respect, we would like to point out that innovation-oriented regions or local authorities should engage in profound and dynamic change and in new configurations of integrity and partnership or mixed institutional governance, which require territorial change based on the spirit of innovation. This change must enable an effective and efficient innovation system to be put in place in terms of the creation of patents and value-added projects, and it must also be endorsed by those responsible for cooperative and partnership governance in order to stimulate innovation and create wealth and value.

Although the implementation of a territorial governance mode applied to innovation is mandatory, due to the legal provisions that govern innovation activities, there are two governance modes (private and according to the institutional hierarchy) that can contribute to slow down the dynamics and the improvement of territorial innovation. On the other hand, we can state that adequate governance based on collaboration and decentralisation remains important since it is considered to be a component that unifies innovation activities and the tasks of those in charge, guaranteeing that the territory's objectives are achieved. On the importance of governance in improving innovation, Callon (1990) also refers to the environment that fosters this improvement: the internal environment (the players in the territory) and the external environment (the territory's partners in innovation) are two key elements for the implementation of partnership governance and consist of a set of processes, standards, but also structures that form the basis for setting up an innovation dynamic throughout the territory (regions, industrial districts, territorial or local authorities, etc.).

CONCLUSION

Finally, the approach in terms of territorial governance of innovation complements the existing literature on territorial economic policies. Indeed, local policies do not only act as economic incentives and do not only generate gains in economic performance and competitiveness: the political legitimacy conferred on innovation environments and the social, cognitive and symbolic dynamics that it can support in turn encourage the various administrative, multi-level and multi-sectoral segments to act in a more coordinated manner. An in-depth study of the literature on a territory at the level of governance geared towards creation and innovation, using the concept of coordination/cooperation, makes it possible to monitor how incentives of political origin can be exploited and have effects in terms of local regulation.

From this point of view, this study sheds original light on the debates on the theme of differentiation between existing modes of governance at the level of territories in general.

Existing works insist on stimulating the aspect of coordination and equal sharing of roles between the different participants involved in territorial innovation. On the other hand, the logic of institutional rivalry (private governance based on the intervention and decisions of a single player, referred to as a key player) is generally presented as having a neutralizing effect on possible coordination between the State, the City and the Region in terms of innovation, governance and also economic action. Our article, on the other hand, highlights a phenomenon of alignment of interventions, around a common governance strategy that brings together local authorities (State, cities, regions) and private players (parks, clusters, industrial districts, innovation circles, etc.) in their decisions regarding innovation activities, in order to better develop and create wealth at territorial level.

Our aim is to support the thesis of a standardization of the territory based on rational and collaborative governance geared towards the dynamics of innovation, and a reduction in the power conflicts between the various participants involved by virtue of an alignment with neo-liberal competitiveness policies. The same applies to support for innovation and entrepreneurship. Instead, bibliometric analysis invites a detailed analysis of the forms taken by institutional rivalry between the different levels of government involved in territorial management. Studies that focus on the temporal dimension, centered on partnership policies, have the advantage of producing analyses that take into account both the State's ability to impose its agenda and its means (financial, normative, symbolic), and the strategies deployed by local and private players to create margins of autonomy for themselves by experimenting with new ways of coordinating their innovation initiatives. According to this bibliometric analysis, we find that appropriate governance based on collaboration and partnership improves the dynamics of innovation activities, whereas private hierarchical governance generates conflicts between participants, which has a negative impact on the dynamics of innovation.

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