
The role of social innovation for a knowledge-based local development: insights from the literature review

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Abstract: This paper presents a comprehensive structured literature review of papers published with a focus on 'social innovation for knowledge-based local development'. The papers published in journals in the range 1997–2019 are analysed to derive insights and implications about the role of social innovation for local development according to a knowledge-based perspective. The analysis of the literature highlights the lack of a homogenous investigation of the relationships between social innovation and knowledge-based local development. However, findings show the growing importance of the theme and underline some relevant research streams: 1) *Dynamics of social innovation for territorial development*; 2) *Promoting participatory development processes for interactive learning, networking and knowledge exchange*; and 3) *The role of institutions to promote, sustain and develop knowledge-based territorial development systems*. The paper concludes with a discussion of the open questions for future research.

Keywords: knowledge based development; structured literature review; social innovation; future research; networking and knowledge exchange; interactive learning; territorial development.

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1 Introduction

In today’s knowledge-driven economy, the nature of territorial development has changed radically. With the increasing knowledge intensity of the contemporary economy, the local development is highly related to the ability to find innovative solutions to problems, to create new products and processes, to set up new firms, and to expand into new areas that create economic value (Sleuwaegen and Boiardi, 2014). Therefore, the need to activate processes of intense knowledge dynamism (Fachinelli et al., 2014) aimed to transform and reconfigure in innovative way knowledge assets, competencies and resources, to fully exploit the potential for growth, becomes imperative. A strategic way to foster and support local development by using and employing knowledge ingrained in a local context is to promote and sustain social innovation as a way to provide an answer to social issues. Indeed, social innovation drives the development of collective new ideas that meet social needs and goals, create social relationships and form new collaborations (Ruijsink et al., 2017).

Several studies argue that social innovation is the new engine of economic growth of cities and territories as it can address various social, economic and technological concerns related to health, living conditions, education systems, employment and economic growth (Jali et al., 2016).

Social innovation can be interpreted as “a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals” (p.39) (Phills et al., 2008).

Numerous empirical studies have provided evidence of the role of social innovation and its outcomes for addressing complex social, economic and technological problems (Spiesberger et al., 2018; Carrillo, 2019; Trunfio and Campana, 2019; Doherty et al., 2014; Altuna et al., 2015; Kanter, 2015). The study of Surikova et al. (2015) argues that social innovation creates a superior knowledge resource that contributes to a better future knowledge worker.

Similarly, Cajaiba-Santana (2014) and Spiess-Knafl et al. (2015) emphasise the role of a superior knowledge resource that social innovation creates for the introduction of excellent products, processes and services that have a multiplier effect on the economic

value. While El Arifeen et al. (2013), with their study, highlight the relevant impacts of social innovation and knowledge resources to provide possible solutions to social health issues.

Although social innovation has been mainly considered by the public policy and sociology literature (Andrew et al., 2010), in recent years the field of innovation has, also, paid a great attention to the role of social innovation as a driver of social development (Ashta et al., 2014; Rüede and Lurtz, 2012). As a result, social innovation has gained an overwhelming acknowledgement within the public discourse. As such, institutions from both private and public sectors are increasingly recognising the relevance of incorporating strategic priorities focusing on social innovation as a core policy dimension, by including social innovation in their agenda for sustainable development (Pue et al., 2015).

The growing attention to social innovation to deal with societal challenges is also putting a renewed emphasis on knowledge as the most strategic intangible resource that can be embedded into products, processes and services to make them superior (Chiva et al., 2014). It is also considered an attribute to the transformation of the social contract on the basis of a human behaviour upgrade (Carrillo et al., 2014; Yigitcanlar, 2019). Indeed, social innovation presupposes the creation and application of new knowledge for the context of the application that enables actors to solve social problems by developing products of services that can better satisfy the wants, needs and expectations of a local community.

Knowledge-based local development can be seen as “the collective identification and enhancement of the value set whose dynamic balance furthers the viability and transcendence of a given community” (Carrillo, 2014, p.416). While, other authors have defined it as the process of producing and transforming knowledge resources into local development (Yigitcanlar et al., 2008a; Yigitcanlar, 2019).

Therefore, social innovation and knowledge-based local development are intertwined since for social innovation to happen, the development and use of knowledge is required, and, on the other hand, local knowledge-based development is achieved when knowledge assets are translated into action that ultimately impacts in terms of sustainable social change for catching and anticipating emerging needs in the society (Schiuma and Lerro, 2014; Yigitcanlar, 2019).

Although the importance of social innovation and knowledge-based development has been identified on a global scale and by various studies, a comprehensive analysis of the relationship between knowledge-based development and social innovation is missing (Howaldt et al., 2015; Tracey and Stott, 2017).

This paper aims to provide a structured literature review (SLR), which discusses how the scientific literature on social innovation for knowledge-based development has evolved through an extensive critical analysis of the body of knowledge. The aim is to derive significant insights and implications, primarily to identify future streams of research. The remaining section of this paper is structured as follow. In Section 2, the systematic literature review methodology is illustrated. Section 3 is dedicated to descriptive analysis. Section 4 is devoted to content analysis. Finally, in the last section, conclusions and implications are presented.

2 Methodology

A structured literature review to shed light on the role of social innovation for a knowledge-based local development has been carried out. According to different scholars (Massaro et al., 2016; Petticrew and Roberts, 2008; Tranfield et al., 2003), an SLR can be considered a suitable method able to contribute to ascertaining research trends and future potentialities. Recently, the SLR approach has grasped substantial progress, going further than merely summarising and inferring prior research, due to the wide availability of academic papers (Massaro et al., 2016). To accurately identify relevant papers to review (Dumay and Cai, 2014; Massaro et al., 2015a, 2015b; Christoffersen, 2013; Thorpe et al., 2005), earlier studies advise different approaches and steps to be followed. Specifically, it is suggested that the SLR needs to follow some particular steps (Massaro et al., 2016), in the aim of performing a transparent, replicable and systematic study.

The first step consists in defining the research questions of the study to investigate how the literature has developed, what is the focus and what are the implications. The research questions formulated in this paper are as follows:

RQ1. How is the social innovation for knowledge-based local development literature developing?

RQ2. What is the focus of the literature within knowledge-based local developments?

RQ3. What are the implications for the research in the field?

Then, the definition of a *research protocol* is necessary for identifying which source of information to use and which methods, means and tools to apply to explore and synthesise the studies (Petticrew and Roberts, 2008).

Next, for a comprehensive literature search, it is necessary to *determine the papers* to include. For the identification of the papers to be included in this paper, we focused on the Scopus database as it provides extensive coverage of academic journals. The Scopus database embraces more than 20,000 peer-reviewed journals (Mishra et al., 2017), and it is bigger than the web-of-science (WoS) database (Thelwall, 2018). Also, it is worth mentioning that the papers indexed in WoS are almost all included in the Scopus database as well (97%) (Waltman, 2016). Consequently, focusing the search on the Scopus database results is an appropriate data warehouse for executing a structured literature review.

Defining the coding framework, following similar and previous research frameworks, is the next step. For this paper, we have identified the following categories:

- *Paper evolution in time:* number of papers published over time;
- *Geography of the papers:* distribution of papers among countries;
- *Journal distribution:* distribution of papers among journals and citations received;
- *Author and citation analysis:* number of quotations, citations per year, citations and collaborations among authors.

As a final point, *critical analysis and discussion* of the outcomes attained are performed. To decrease errors, a SLR and a bibliometric review are accomplished in this study. Previous studies highly recommend the combination of these two methods as they allow to enhance the value of the research outcomes (Feng et al., 2017; Fahimnia et al., 2015).

For the selection of suitable papers to include in the study, the keywords and combinations identified and used for the search were ‘social innovation’ AND “knowledge-based local developments”. This way of searching for papers produced a total of 187 papers. Data were collected in September–October 2019. We considered only journal papers published up to 2019 (inclusive), and we excluded conference papers, book chapters, research notes, editorials, and commentaries (Keupp et al., 2012).

The analysis of data collected consisted of a descriptive study aimed to underline the paper distribution over time and among countries. The aim has been to emphasise how the literature has supported over time the development of a scientific discourse, also within specific national contexts (Massaro et al., 2015a).

Moreover, descriptive analysis related to analysing the impact of the citation index (CI) and the citations per year (CPY) has been performed, making sure that analysis of paper keyword occurrences allows ascertaining the most relevant and used ones.

The tool VOSviewer was used for analysing the data following the manual coding performed by the authors. VOSviewer is a valuable tool that permits to construct and visualise bibliometric networks and clusters (Van Eck and Waltman, 2017).

Different techniques are applied for processing and analysing data (van Eck and Waltman, 2017):

- Cooccurrence analysis has been performed to establish the number of papers in which they occur together using as unit of analysis author’s keywords (Eck and Waltman, 2009). We set the software to include papers in which keywords occur at least three times.
- Bibliographic coupling has been performed to trace the state of the art and to analyse the relevance of papers based on the references they share (Kessler, 1963; Boyack and Klavans, 2010), by instituting intellectual linkages among documents. The pertinence has been evaluated considering those papers that mainly share the same references. Papers with the same references form a cluster that may mark a specific theme/topic. Only papers with at least one citation have been considered.

Fractional counting has been used for all the analyses performed with VOSviewer (Leydesdorff and Opthof, 2010). The clustering technique is suitable for performing bibliometric analysis by VOSviewer developers as it refers to distances between nodes, and therefore groups/clusters are determined by minimising (Van Eck and Waltman, 2017).

As a final point, content analysis has been carried out to grasp the emerging trends and research gaps as well as to identify future research directions of the topic.

3 Research findings: insights and critique

This section illustrates the results of the SLR. In particular, it is discussed how social innovation for knowledge-based local developments is investigated. Then, the critical dimensions of the knowledge-based local developments are identified.

3.1 Descriptive analysis

3.1.1 Paper evolution in time

Figure 1 shows the number of published papers in the time frame 1997–2020. It first suggests that the number of published papers appears to be growing over the time frame 2005–2019. There are some peaks reached in different periods, such as at 2005 with nine papers published on the theme, then the number of papers decreased again up to 2011 where another peak is reached with 15 papers published. The highest peak of published papers was reached in 2017 with 23 papers published on the theme. The figure also shows the cited documents in the time frame considered. As could be clearly seen, the citations follow the same trend of publication in time (Figure 2). This fact may reveal that scholars consider this topic pertinent for in-depth exploration in future studies.

Figure 1 Papers evolution overtime (see online version for colours)

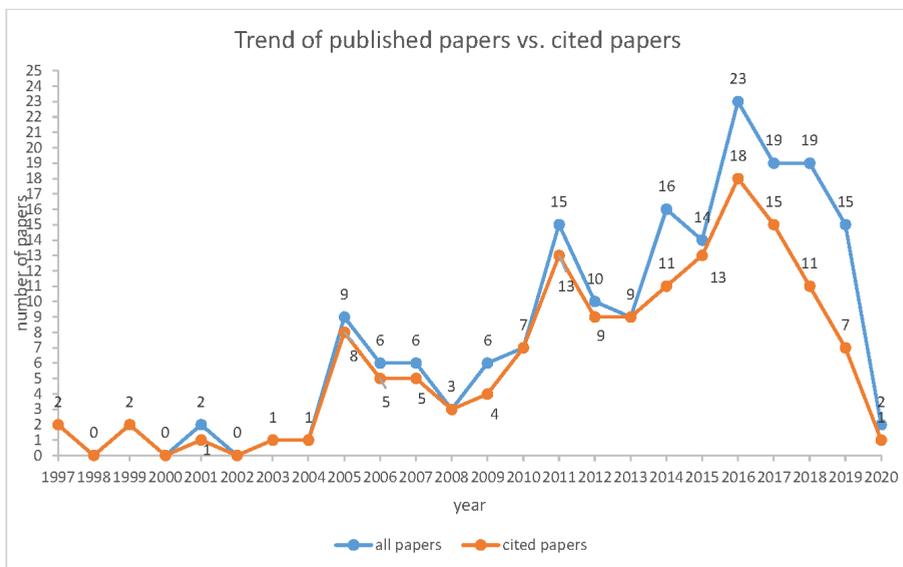
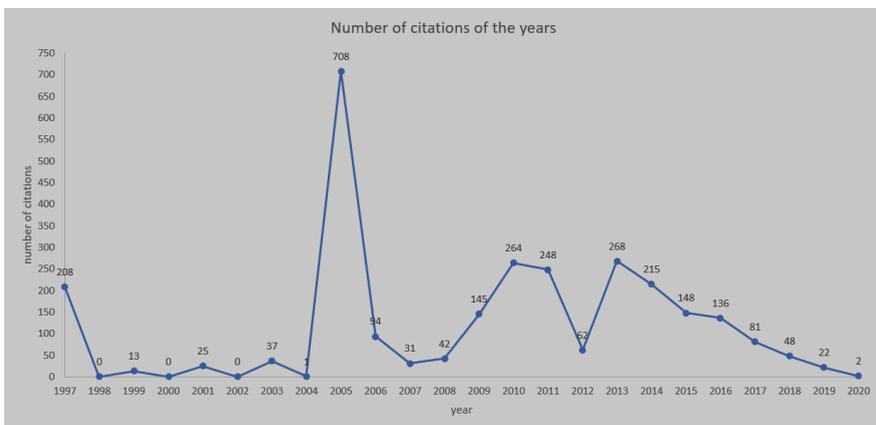


Figure 2 Papers citations overtime (see online version for colours)



3.1.2 Geography of the papers

An analysis of the geography of the 187 retrieved papers was performed, to find out if there is a country or region specialisation in the research area. The analysis performed considers the number of published papers per country (Figure 3), the number of citations per country and the number of cited papers per country (Figure 4). The count was made by considering the involvement of a country (by university/research institution) in the paper's authorship: if the cooperation of different countries developed a paper, each country received one point. So, this geographical investigation gives rise to understanding which countries have ever shown interest in studying the topic of social innovation for knowledge-based local developments.

Specifically, we found that:

- The top three countries with the highest representation are UK, USA and Australia with 18, 18 and 16 papers, respectively, published on the theme;
- Instead, concerning the citations, the top three countries citing results are Australia (with 1487 citations) Canada with 997 citations and UK with 512 citations (Figure 4). Also France, USA and Netherlands perform well with 457, 347 and 260 citations, respectively.

3.1.3 Journals

Table 1 represents the journals that are ranked as top ten per number of papers published. As can be clearly seen, there is no specialisation of journals on the theme. '*International Journal of Knowledge-Based Development*' is at first place with four papers published. The total amount of published papers in top 10 journals is 24. This data could be interpreted as a need to explore the topic better.

Table 1 Top 10 journal ranked by number of published papers

<i>Journal</i>	<i>No. of papers</i>	<i>Total Cit.</i>
<i>International Journal of Knowledge-Based Development</i>	4	27
<i>Journal of Cleaner Production</i>	3	150
<i>Ecology and Society</i>	3	199
<i>Journal of the Knowledge Economy</i>	2	162
<i>Technovation</i>	2	147
<i>Implementation Science</i>	2	76
<i>Journal of Ethnobiology and Ethnomedicine</i>	2	65
<i>Social Science and Medicine</i>	2	40
<i>Innovation</i>	2	28
<i>Local Environment</i>	2	17

Figure 3 Countries ranked by number of published papers (see online version for colours)

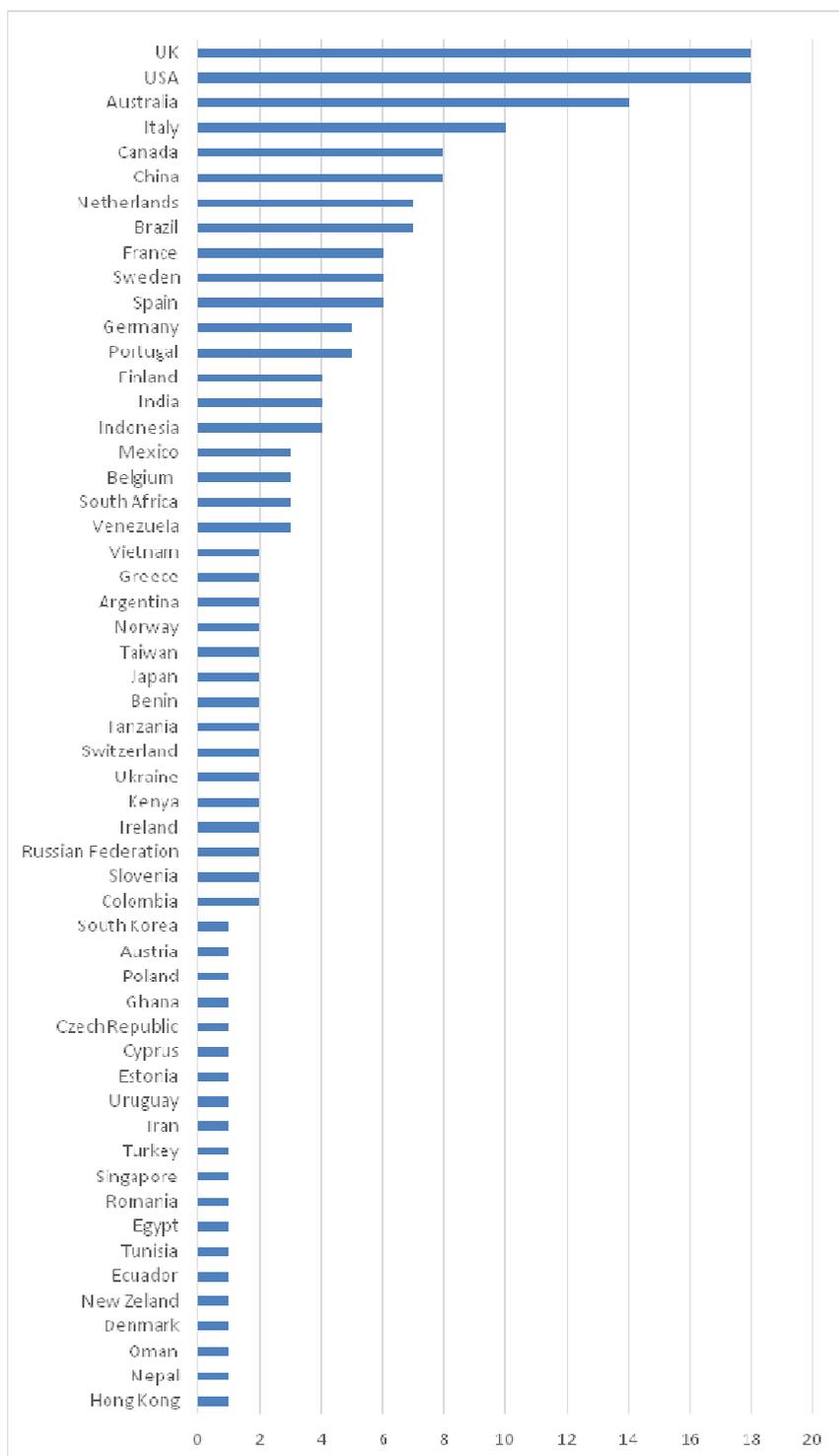
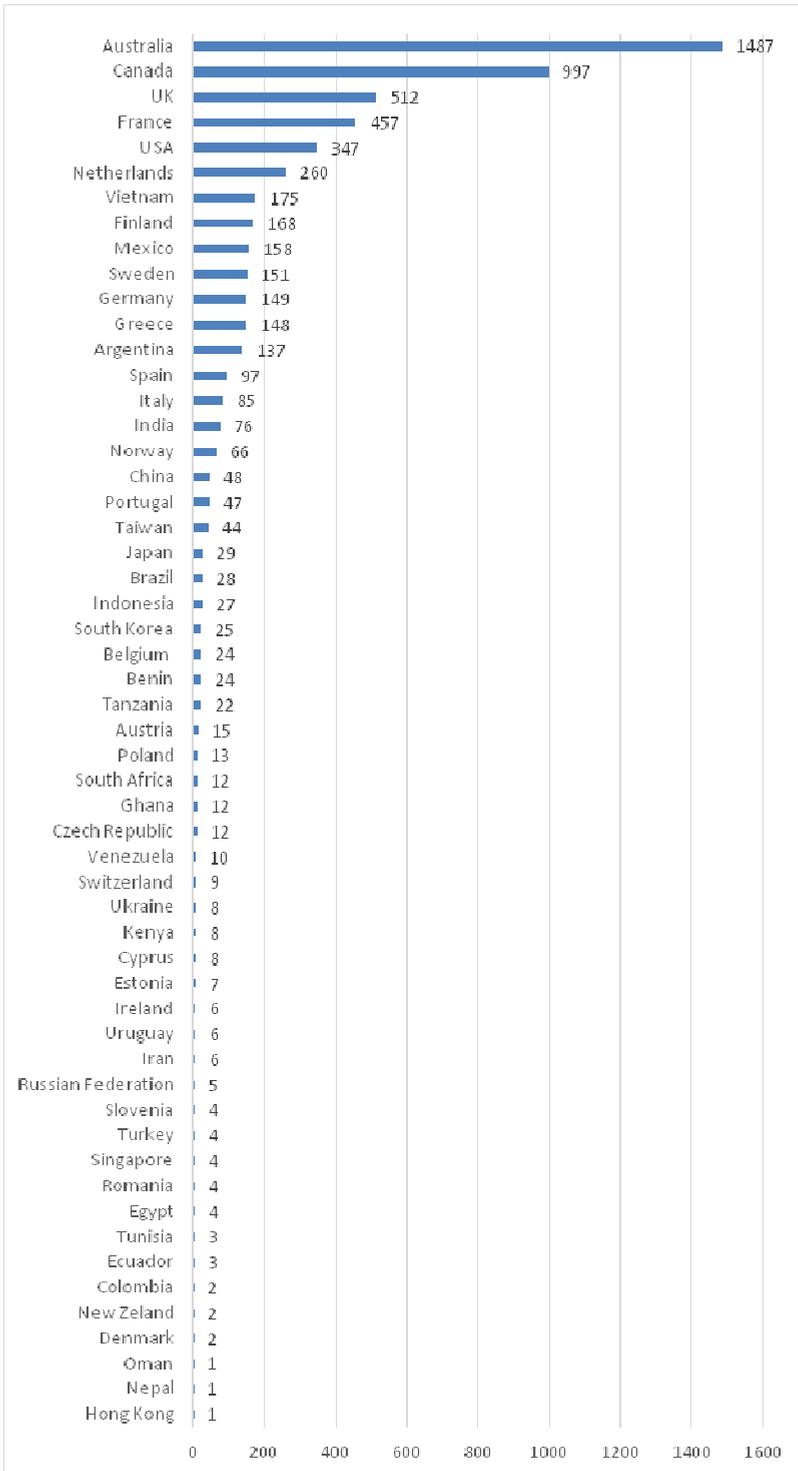


Figure 4 Countries ranked by number of citations (see online version for colours)



However, if we consider the top 10 journals by citations (Table 2), the three most-cited journals result to be ‘Industry and Innovation’, ‘Harvard Business Review’ and ‘Ecology and Society’. While for the first two journals there is just one paper that has received the highest level of citations, for the third journal there are three papers that overall gain 199 citations. These pieces of evidence highlight the fact that the influence is much more a matter of specific paper than that of a relative journal.

Table 2 Top 10 journal ranked by number of total citations received by published papers

<i>Journal</i>	<i>Total Cit.</i>	<i>No. of papers</i>
<i>Industry and Innovation</i>	233	1
<i>Harvard business review</i>	202	1
<i>Ecology and Society</i>	199	3
<i>Journal of the Knowledge-Economy</i>	162	2
<i>Journal of Cleaner Production</i>	150	3
<i>Hepatology</i>	148	1
<i>Technovation</i>	147	2
<i>Journal of Advanced Nursing</i>	124	1
<i>Cambridge Journal of Economics</i>	111	1
<i>European Urban and Regional Studies</i>	100	1

3.1.4 Author citations and most influential ones

To measure the influence of authors and the impact of their papers, we measured the total number of citations and citations per year (CPY). Table 3 lists the top 10 papers ranked by total citations, and the top 10 papers ranked by CPY.

The most interesting papers date back to 2005. The most influential paper is Gertler and Levitte (2005), ‘Local nodes in global networks: The geography of knowledge flows in biotechnology innovation’, with 233 citations, followed by Kim and Mauborgne (1997), ‘Fair process: Managing in the knowledge economy’. Authors of the top 10 most cited papers stand more or less on the same interval of citations (100–200 citations). However, to better assess the citation trend of authors, it is relevant to consider the CPY, as according to Massaro and Dumay (2015) the large number of papers being published impact on decreasing the CPY value. Moreover, it is argued that recently published papers “have not had sufficient time to garner citations” (Dumay, 2014, p.22). Therefore, by considering this measure, it emerges that the most cited paper (per CPY) is the Smith et al. (2013) paper with a CPY value of 27.2, followed by Komminos et al. (2013) with CPY 24.

Our analysis reveals that the papers with the highest CPY are those published in 2014 and 2013. Interestingly, the maximum CPY is 27.2 while the minimum CPY of the 10 most cited papers is 2.27, showing a low level of CPY in general as well as the wide difference among values that are five times lower the most cited one. Following these results, it could be suggested that the authors who want to publish on these topics should “think carefully about how their research is transformational [...]” (Dumay, 2014, p.20).

Table 3 Top 10 papers ranked by total citations and top 10 papers ranked by CPY

<i>Authors</i>	<i>Title</i>	<i>Year</i>	<i>Source title</i>	<i>Cited by</i>	<i>CPY</i>	<i>Ranking CPY</i>
Gerler M.S. and Levitte Y.M.	Local nodes in global networks: The geography of knowledge flows in biotechnology innovation	2005	<i>Industry and Innovation</i>	233	16.64	3
Kim W.C. and Mauborgne R.	Fair process: managing in the knowledge economy	1997	<i>Harvard business review</i>	202	9.18	8
Castella J.-C., Trung T.N. and Boissau S.	Participatory simulation of land-use changes in the northern mountains of Vietnam: The combined use of an agent-based model, a role-playing game, and a geographic information system	2005	<i>Ecology and Society</i>	174	12.43	7
Arora S., Kalishman S., Thornton K., Dion D., Murata G., Denning P., Parish B., Brown J., Komaromy M., Coleran K., Bankhurst A., Katzman J., Harkins M., Curet L., Cosgrove E. and Pak W.	Expanding access to hepatitis C virus treatment – Extension for Community Healthcare Outcomes (ECHO) project: Disruptive innovation in specialty care	2010	<i>Hepatology</i>	148	16.44	4
Komminos N., Pallot M. and Schaffers H.	Special Issue on Smart Cities and the Future Internet in Europe	2013	<i>Journal of the Knowledge Economy</i>	144	24	2
Smith A., Fressoli M. and Thomas H.	Grassroots innovation movements: Challenges and contributions	2014	<i>Journal of Cleaner Production</i>	136	27.2	1
Kitson A.L.	The need for systems change: reflections on knowledge translation and organisational change	2009	<i>Journal of Advanced Nursing</i>	127	12.7	6
Carayannis E.G. and Von Zedtwitz M.	Architecting gloCal (global-local), real-virtual incubator networks (G-RVINS) as catalysts and accelerators of entrepreneurship in transitioning and developing economies: Lessons learned and best practices from current development and business incubation practices	2005	<i>Technovation</i>	124	2.27	10
Graf H.	Gatekeepers in regional networks of innovators	2011	<i>Cambridge Journal of Economics</i>	111	13.88	5
Moulaert F. and Nussbaumer J.	The social region: Beyond the territorial dynamics of the learning economy	2005	<i>European Urban and Regional</i>	100	7.14	9

3.2 Clustering and content analysis

3.2.1 Clustering analysis

To better comprehend and explore the literature focusing on the relationships between social innovation and knowledge-based local development and to extract insights useful for future research in the field, a clustering analysis is proposed using bibliographic coupling (Kessler, 1963). For this reason, to perform the bibliographic coupling, we considered all papers, and we used as the unit of analysis documents and sources. Only papers with at least one citation were considered, to avoid the fragmentation of results as well as the unpacking of the same topic from different areas. The relatedness has been evaluated by considering the papers that mainly share the same references (Boyack and Klavans, 2010). The analysis provides four clusters and 16 papers. The clusters recognised bring together those papers that may mark a specific topic/approach.

Figure 5 and Table 4 show the clusters y considering the strength of the closeness concerning the number of common bibliography appearing in the paper. Therefore, the cluster technique of VOSviewer software works out after running 10 interactions.

3.2.2 Content analysis

The clusters identified through the bibliographic coupling analysis were selected. Then, an in-depth analysis of papers included in clusters was carried out with the aim to get a complete understanding of the main themes developed in the literature. The content analysis was performed independently by two researchers, consisting of reading all papers and classifying them according to research streams. This process allowed the identification of three research streams that can be considered as a synthesis of the contingent body of knowledge.

Even though most of the papers fitting a specific bibliographic cluster belong to the same research stream, there is no perfect matching. There are some exceptions. For a better illustration of the research streams, the emerging papers from bibliographic coupling are categorised into the three research streams according to their content and focus (Table 5).

Figure 5 Bibliographic coupling clusters (see online version for colours)

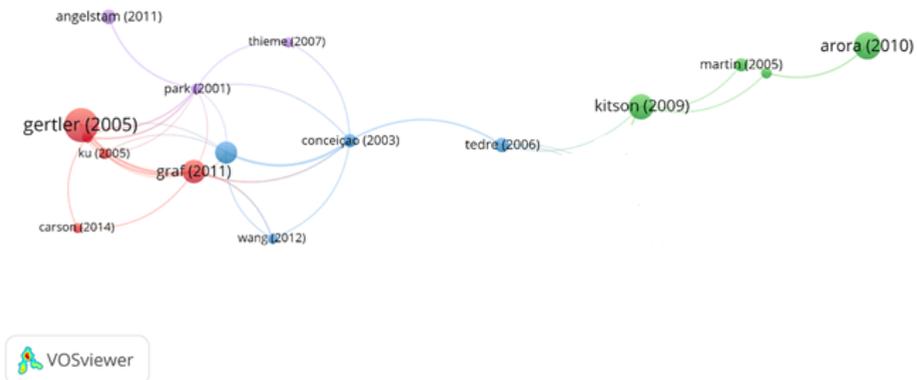


Table 4 Papers for each bibliographic coupling cluster

	<i>Authors</i>	<i>Citations</i>	<i>Title</i>
Cluster 1 (5 items – red)	Carson et al. (2014)	21	Understanding local innovation systems in peripheral tourism destinations
	Crescenzi and Rodríguez-Pose (2013)	23	R&D, socio-economic conditions, and regional innovation in the U.S
	Gertler and Levitte (2005)	233	Local nodes in global networks: The geography of knowledge flows in biotechnology innovation
	Graf (2011)	111	Gatekeepers in regional networks of innovators
	Ku et al. (2005)	23	The high-tech milieu and innovation-oriented development
Cluster 2 (4 items – green)	Arora et al. (2010)	148	Expanding access to hepatitis C virus treatment – Extension for Community Healthcare Outcomes (ECHO) project: Disruptive innovation in specialty care
	Kitson (2009)	127	The need for systems change: reflections on knowledge translation and organisational change
	Martin and Sturmberg(2005)	38	General practice – Chaos, complexity and innovation
	Tolson et al. (2008)	23	Achieving evidence-based nursing practice: Impact of the Caledonian Development Model
Cluster 3 (4 items – light blue)	Conceição et al. (2003)	37	Infrastructures, incentives, and institutions: Fostering distributed knowledge bases for the learning society
	Moulaert and Nussbaumer (2005)	100	The social region: Beyond the territorial dynamics of the learning economy
	Tedre et al. (2006)	42	Ethnocomputing: ICT in cultural and social context
	Wang et al. (2012)	21	In Search of an Innovative State: The Development of the Biopharmaceutical Industry in Taiwan, South Korea and China
Cluster 4 (3 items – violet)	Angelstam et al. (2011)	42	Knowledge production and learning for sustainable forest management on the ground: Pan-European landscapes as a time machine
	Park (2001)	25	Regional innovation strategies in the knowledge-based economy
	Thieme (2007)	21	Perspective: The world’s top innovation management scholars and their social capital

The emerging research streams consist of:

- *Research stream 1*: Dynamics of social innovation for territorial development;
- *Research stream 2*: Promoting participatory development processes for interactive learning, networking and knowledge exchange;

- *Research stream 3*: The role of institutions to promote, sustain and develop knowledge-based territorial development systems.

Table 5 Research streams

<i>Research streams</i>	<i>Authors</i>
<i>Research stream 1: Dynamics of social innovation for territorial development</i>	Carson et al. (2014), Crescenzi and Rodríguez-Pose (2013), Levitte (2005) and Ku et al. (2005).
<i>Research stream 2: Promoting participatory development processes for interactive learning, networking and knowledge exchange</i>	Arora et al. (2010), Kitson (2009), Martin and Sturmberg (2005) and Tolson et al. (2008)
<i>Research stream 3: The role of institutions to promote, sustain and develop knowledge-based development systems</i>	Conceição et al. (2003), Moulaert and Nussbaumer (2005), Tedre et al. (2006), Wang et al. (2012), Angelstam et al. (2011), Park (2001) and Thieme (2007)

Research stream 1: Dynamics of social innovation for territorial development

Papers in this stream mainly focus on analysing the enabling and hampering factors that impact on innovation at a regional level, dynamics of networking collaboration and knowledge exchange among different community members.

Most authors in this stream agree on the fact that the territorial dynamics of collaboration, networking, and knowledge sharing are essential predictors of innovation performance.

Some of the most significant contributions focus on the scrutiny of the “determinants of innovation paying particular attention to internal resources and capabilities of the firms as well as local and global flows of knowledge and capital” (Gertler et al., 2005). Carson et al. (2014) provide a very relevant study on the contribution of communities to innovation at a regional level. The authors analyse dynamics of networking and collaboration of tourism stakeholders to conclude that modernisation of local systems encounters significant barriers such as the local culture of collaboration, leadership style, system interactions, ambition, and inability to stimulate knowledge sharing and transfer. Crescenzi and Rodríguez-Pose (2013) focus on exploring the role of socio-economic factors and systems of innovation and their effects for innovative regional performance. Graf (2011) focuses on the role of gatekeepers, i.e., actors that generate novelty by drawing on local and external knowledge, and examines their characteristics for underlining the differences concerning the degree of interaction of innovative actors within a local network. Ku et al. (2005) provide a relevant study on the analysis of the innovation systems (milieu) for innovation-oriented development. The investigation is focused on the role of knowledge-based environment and cooperation within a vast ecosystem of actors as well as a social network for developing innovative milieu.

Research stream 2: Promoting participatory development processes for interactive learning, networking and knowledge exchange

This research stream is distinguished by four relevant contributions that focus mainly on analysing the effects of participatory processes in healthcare contexts. The attention is paid to the role of knowledge sharing, interactive learning and networking in specific communities. In particular, Arora et al. (2010), focus on analysing the role of knowledge-

based communities of practice to enhance participants' learning outcomes and benefits. A further focus of the investigation is the analysis of how to develop complex knowledge and how to engage in communities with critical stakeholders with the scope of leading and sustaining innovations in healthcare service (Martin and Sturmberg, 2005). The paper of Tolson et al. (2008) focuses on analysing the features of practice development activities such as knowledge pooling, and social participatory learning model in communities of practice to develop and sustain evidence-based practices.

Research stream 3: The role of institutions to promote, sustain and develop knowledge-based territorial development systems

This research stream considers the clusters of papers focusing on the role that institutions can play to sustain and develop territorial knowledge-based approaches and strategies. In particular, the attention is paid to the strategic relevance that institutions can play to foster innovation in the learning society and to move toward a knowledge-induced growth (Conceição et al., 2003). In particular, the inclusive learning and social capital are considered as crucial elements for local development as they entail the process of shared prosperity and distributed knowledge relevant for knowledge-induced growth. In the same line, the study of Moulaert and Nussbaumer (2005), 'The social region: Beyond the territorial dynamics of the learning economy', discusses the dynamics of knowledge, learning, evolution, culture for the territorial development and the consequences of the community-oriented approach for local and regional development policies and strategies. The study puts forward the concept of community development based on social innovation as an alternative to market-led territorial development. Wang et al. (2012) provide a further perspective, discussing the role that an institutional platform can play to attract knowledge-creation players to promote innovation-based industries in specific territorial settings.

Also, the papers that belong to the fourth are mapped into this research stream since the main focus of these papers stands on discussing the role of innovation strategies for the development of knowledge-based territorial development systems. In particular, Angelstam et al. (2011) discuss the role of local place-based social learning processes for innovative knowledge production. Based on a comparative case study approach using five European landscapes, the study highlights the relevance of transdisciplinary knowledge production, collaborative learning process to achieve local-tailored governance and management objectives through an improved collaboration of stakeholders from different societal sectors at different levels. A further relevant view is provided by Park (2001), who focuses on major policy issues for promoting innovation and regional competitiveness. The fundamental idea is that regions can develop their region-specific innovation systems, by taking into consideration their distinctive characteristics related to local development, business climate, labour market, etc. Concerning this specific situation, several policy issues could be proposed, such as the promotion of region-specific clustering; development of habitats for innovation and entrepreneurship; collective learning processes and innovation networks; building a stock of social capital; and promotion of local and global networks.

4 Conclusions

In this paper, the results of a structured literature review are illustrated to shed light on the current understanding of the relationships between social innovation and knowledge-based local development. Some interesting implications can be drawn to understand relevant venues of research for the field of social innovation and knowledge-based local development.

The analysis of the literature revealed there had been a steady interest of academics on the issue, starting from 1997. However, despite the growing number of publications on the topic, the research seems to be yet very fragmented. Waves of attention characterise the papers published on the issue as the production peaks in 2005, 2011, 2014 illustrate. Besides, the publications tend to appear in different outlets, and there is no specific journal emerging as a platform to develop a consistent discussion on the topic. Also, in terms of nationality of the contributions, there is substantial heterogeneity.

The low level of focus of the scholarly conversations about the relationships between social innovation and knowledge-based local development is also affected by the lack of frameworks and tools specifically developed to address the issue. In fact, at present most of the contributions appear proposing models and theory developed in other contexts and applied to the realm of social innovation under a knowledge-based view. This calls for more granular and specialised studies investigating the links between social innovation and knowledge-based perspectives of local development and value creation.

The content analysis of the selected papers defined from the bibliographic coupling allows underlining some relevant topics and keywords. The analysis reveals that previous studies highlight both the importance of knowledge sharing/transfer processes as well as learning processes between members of specific communities for local development. The emerging keywords that are used by authors to signal important themes consist of dynamics of knowledge, knowledge production, role of knowledge sharing, local and global flows of knowledge and capital, collaborative learning process, interactive learning and networking, networking and collaboration, social innovation, innovation ecosystems, community/territorial development, community-oriented approach, and communities of innovation. The use of these keywords is disjointed among different papers. However, they provide a relevant implication for scientific debate to support and further contribution to the theme of social innovation for knowledge-based local developments by developing studies that explore in a more profound way knowledge-based processes and interactive learning dynamics among community members in specific regional settings.

An interesting viewpoint is that while acknowledging the role of technology and its associated opportunities for the development of a knowledge society, as it enables the democratisation of knowledge and reduction of information asymmetries, our analysis revealed that no research stream focusing on the interrelationship between technology and its applications and social innovation practices emerges. It is recognised that today's societies generate massive amounts of data that are relevant to creating social value. Yet, they seem to be under-researched and unused for social policy and social action (Agarwal and Dhar, 2014). Therefore, future studies that understand better how social innovation could benefit from the power of data and to define the paths to enable data-driven decision-making are essential. Hence, the results of this SLR call for further empirical and theoretical research studies that, from one side, could provide a significant consolidation of the new scientific conversations on the theme and, on the other hand,

could explore new avenues through thematic focuses. This calls for the more active involvement of scholars for a better understanding of this research context useful for increasing the impact and interest. In this regard, some open issues emerge that could be fields of investigation for future researchers:

- identify the main challenges related to social innovation processes
- understand how to get the most out of the opportunities provided by technology and big data for increasing the performance of social innovation processes
- sketch out innovative approaches, strategies and models for optimising the performance of social innovation processes.

The identified open issues define some possible relevant topics for future research as well as some significant implications for academicians and practitioners. Social innovation increasingly will represent the way through which institutions can deal with a complex problem for well being and to address complex challenges. The research in the field of knowledge-based development has provided many models, frameworks and tools that recognise knowledge assets as value drivers providing policy and management implications to organise and govern organisational systems so that they can create superior value. Fundamentally, the emergent stream of research on social innovation and the traditional focus on knowledge-based development can be combined to devise a new understanding of how local growth can be spurred and sustained through knowledge-based initiatives foster social innovation.

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