

HOW SOCIAL IMPACT AND INNOVATION HAVE BEEN RELATED IN THE ACADEMIC LITERATURE?

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Abstract

Purpose: Analyze what subjects emerges when integrating “social impact” and “innovation” in the scientific literature.

Methodology: It was developed a systematic review of literature. Data analysis was done in two stages: descriptive and exploratory. The co-word network maps were analysed through the VOSviewer software.

Originality/Value: The globalization and the advancements in the technological and informational fields, together with the development of the emerging economies, involve a range of challenges. In this sense, technology could increase the capability of identifying social needs and enhances the low-cost possible solutions. However, it is not clear how innovation and social impact have been analysed by the literature.

Findings: Previous studies were advanced, by not restricting a period for the collection and contemplating the last three years (2015-2018), where 70% of the articles of the sample belong. Furthermore, the clusters’ analysis allows the development of new research focusing on subareas that permeate this discussion, thus helping to define, understand and advance the discussion of the theme.

Theoretical/methodological contributions: The main subject that emerges from the analysis was the financial question. Both in the bibliographic and the qualitative analysis of the top papers, it was noticed that as a theoretical basis and practical example of social impact innovation, the financial innovations stand out.

Managerial implications: The result reinforces that meeting the social needs is an opportunity for entrepreneurs, that can act attaining inclusive economy and inclusive growth.

Keywords: bibliometric network analysis. Social entrepreneur. Social entrepreneurship. Social innovation. Systematic review of literature.

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C

OMO IMPACTO SOCIAL E INOVAÇÃO FORAM RELACIONADOS NA LITERATURA ACADÊMICA?

Resumo

Objetivo do estudo: analisar quais assuntos emergem ao integrar “impacto social” e “inovação” na literatura científica.

Metodologia/abordagem: Foi desenvolvida uma revisão sistemática da literatura. A análise dos dados foi realizada em duas etapas: descritiva e exploratória. Os mapas de rede de co-word foram analisados através do software VOSviewer.

Originalidade/Relevância: A globalização e os avanços nos campos tecnológico e informacional, juntamente com o desenvolvimento das economias emergentes, envolvem uma série de desafios. Nesse sentido, a tecnologia poderia aumentar a capacidade de identificar necessidades sociais e aprimorar as possíveis soluções de baixo custo. No entanto, não está claro como a inovação e o impacto social foram analisados pela literatura.

Principais resultados: Estudos anteriores foram avançados, não restringindo um período para a coleta e contemplando os últimos três anos (2015-2018), onde constam 70% dos artigos da amostra. Além disso, a análise dos *clusters* permite o desenvolvimento de novas pesquisas com foco em subáreas que permeiam essa discussão, ajudando a definir, entender e avançar na discussão do tema.

Contribuições teóricas/metodológicas: O principal assunto que emerge da análise foi a questão financeira. Tanto na análise bibliográfica quanto na qualitativa dos principais trabalhos, percebeu-se que, como base teórica e exemplo prático de inovação de impacto social, destacam-se as inovações financeiras.

Contribuições sociais/para a gestão: O resultado reforça que atender às necessidades sociais é uma oportunidade para os empreendedores, que podem atuar para alcançar a economia inclusiva e o crescimento inclusivo.

Palavras-chave: análise bibliométrica de redes; Empreendedor Social; Empreendedorismo Social; Inovação social; Revisão sistemática da literatura.

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1 INTRODUCTION

The globalization and the advancements in the technological and informational fields, together with the development of the emerging economies, involve a range of societal challenges. These challenges show up in different areas, from health and well-being, which incorporate issues related to food security, sustainable agriculture and forestry, going through transport, migrations, climate action, environment and resource efficiency, which raises questions concerning freedom and security of the population (Grimm, Fox, Baines, & Albertson, 2013).

Every challenge involves an opportunity to be solved. Technology plays a role in this sense, as increases the capability of identifying social needs and, throughout this, increases the low-cost possibilities to solve specific social issues. Some examples of the integration of technology to solve new economic paradigms are: sharing economy (Hamari, Sjöklint, & Ukkonen, 2016), circular economy (Ghisellini, Cialani, & Ulgiati, 2016) and inclusive economy (Hall, Matos, Sheehan, & Silvestre, 2012).

When combining societal challenges with technological opportunities, arises the concept of social innovation, that in this article is construed by Mulgan (2006, p. 146) as "innovative activities and services that are motivated by the goal of meeting a social need". Practical effort of social innovation can be found in different sectors and countries, such as communication system (e.g., Pedius in Italy), solar energy systems (e.g., We Care Solar in California); bank sector (e.g. Banco Palmas and Banco Pérola in Brazil); training (e.g. Albergo Etico in Italy); food system (e.g. Hot Bread Kitchen in New York); consultancy and training (e.g. Timewise Foundation in London), medical center (e.g. Dr Consulta in Brazil); among others.

Nevertheless, despite the existence of many social issues, all the disparity created through the market failures and the performance of organizations with the intention to act in these gaps through "social innovation", there is no consolidated definition for this concept in the literature (Bignetti, 2011; de Bruin & Stangl, 2013; Pol & Ville, 2009). This vagueness is due to the junction of two complex words ("social" and "innovation"), that carry, according to de Bruin and Stangl (2013), "interpretive challenges". As Cajaiba-Santana (2014) points out that, up to now, the literature related to social innovation evidences that the research about this topic is still based, mostly, on case studies and anecdotal evidence (Mulgan, 2006; Murray, Caulier-Grice, & Mulgan, 2010). This fact leads to a fragmented characteristic of the theme that is spread through different fields such as urban and regional development (Moulaert, Martinelli, Swyngedouw, & Gonzalez, 2005), public policy (Guth, 2005;

Klein, Tremblay, & Bussi eres, 2010), management (Clements & Sense, 2010; Drucker, 1987), social psychology (Mumford, 2002) and social entrepreneurship (Lettice & Parekh, 2010; Short, Moss, & Lumpkin, 2009).

Based on Heeks, Foster, and Nugroho (2014) vision that the use of innovation to improve the wealth of higher income consumers and the productivity of formal enterprises only aiming the economic development contributes to the perpetuation of an innovation of inequality, it is formulated the following question: which subjects emerges when integrating "social impact" and "innovation" in the scientific literature? In this context, it was developed a systematic review of literature of articles published in the Web of Science database followed by bibliometric network analysis.

2 SOCIAL INNOVATION: AN OVERALL IDEA OF THE CONCEPT

According to Phills, Deiglmeier, and Miller's (2008) approach to understand the concept of "social innovation" is required the definition of the separated words "social" and "innovation" and, in a second moment, the coupling of the two words in the full term.

Schumpeter, seen as the "father" of innovation, "stated that economy expansion is directly dependent on innovation" (Medeiros, Ribeiro, & Cortimiglia, 2014, p. 76). In line with his ideas, it is considered innovation as the deployment of a product (good or service), process, or business practice that is new or significantly enhanced (Camis on & Monfort-Mir, 2012; Gopalakrishnan & Bierly, 2001). Moreover, since the beginning, innovation was seen as a way through which companies achieved competitive advantage, having strategic importance (Porter & Kramer, 2011).

Considering the types of innovation, Table 1 presents and exemplifies the social innovation types and some examples.

Table 1: Typology of Social Innovation

| Types of social innovation | Examples |
|------------------------------|--|
| i) New products | Assistive technologies developed for people with disabilities (voice synthesizers) |
| ii) New services | Mobile banking (MPesa in Kenya) |
| iii) New processes | Peer-to-peer collaboration and crowdsourcing |
| iv) New markets | Fair Trade or time banking |
| v) New platforms | New legal or regulatory frameworks or platforms for care |
| vi) New organizational forms | Community interest companies |
| vii) New business models | Social franchising, or just in time models applied to social challenges |

Source: Adapted from Caulier-Grice et al. (2012)

Social innovation is being perceived as the merge of the “innovation” definitions that consider products, services and business models new or importantly improved, and that, at the same time, meet the social needs of the society in a more efficient way than the existing ones (Murray et al., 2010). Stemming from the charity vision and becoming a profitable way of doing business and providing market-based solutions for social problems, the social innovation changes the way that business sees social change, introducing a new opportunity for doing business (Saul, 2011).

Aiming to facilitate the definition of a socially innovative practice, Caulier-Grice et al. (2012, p. 19) propose the following five elements:

- a) Novelty: Social innovations do not need to be completely original or unique. However, they do have to be new in some way to qualify as a social innovation – either new to the field, sector, region, market or user, or to be applied in a new way. Perceived novelty to the unit of adoption is a critical feature of our working definition;
- b) From ideas to implementation: there is a distinction between the formulation of a new idea and the practical implementation and application of that idea into a financially sustainable service or initiative (an innovation);
- c) Meets a social need: social innovation is that it is explicitly designed to meet a social need (being those things which can cause serious harm or socially recognizable suffering when not met);
- d) Effectiveness: social innovation should be more effective than existing solutions. That is, it should create a measurable improvement regarding outcomes;
- e) Enhances society’s capacity to act: Empowers beneficiaries by creating new roles and relationships, developing assets and capabilities and/or better use of assets and resources.

Table 2 summarizes the characteristics that define a social innovation.

Table 2: Common features of social innovation

| Common features | Description |
|--|--|
| a) Cross-sectoral | Occur at the interfaces between sectors and involve actors from across sectors |
| b) New social relationships and capabilities | Social innovations are developed 'with' and 'by' users and not delivered 'to' and 'for' them. They can be identified by the type of relationships they create with and between their beneficiaries |
| c) Open, collaborative and experimental | Production by the masses - large numbers of people working independently on collective projects without normal market structures and mechanisms |
| d) Presumption and co-production | Blurred boundary between producers and consumers |
| e) Grass-roots, bottom-up | Distributed systems where innovation and initiative are dispersed to the periphery and connected by networks |
| f) Mutualism | The notion that individual and collective well-being is obtainable only by mutual dependence |
| g) Better use of assets and resources | Recognition, exploitation, and coordination of latent social assets |
| h) Development of capabilities and assets | Participatory approach enabling beneficiaries to meet needs over the longer term |

Source: Adapted from Caulier-Grice et al. (2012).

Because this is a new field of study, still can be found overlaps of terms and definitions towards the social innovation slope. Among them, there is the proximity to the definition of "inclusive innovation", that, according to George, McGahan, and Prabhu (2012, p. 663), is "the development and implementation of new ideas which aspire to create opportunities that enhance social and economic wellbeing for disenfranchised members of society".

Table 3 illustrates the advances of the discussions and the consequential definitions of "social innovation" since 1970.

Table 3: Definitions of social innovation according to several authors.

| Author | Definition |
|--|--|
| Taylor (1970) | Enhanced ways of action, new ways of doing businesses, new social inventions. |
| Dagnino and Gomes (2000) | Knowledge - intangible or incorporated to people and equipment, tacit or codified - with the aim of increasing effectiveness of processes, services and products related to social needs fulfillment. |
| Cloutier (2003) | A new answer, defined in action and with lasting effect, to a social situation considered unsatisfactory that aims to achieve of individuals and/or communities' welfare. |
| Stanford Social Innovation Review (2003) | The process of inventing, supporting and implementing new solutions to problems and social needs. |
| Goldenberg (2004) | Social innovation is the development and application of new/improved activities, initiatives, services, processes or products developed to overcome the social and economic challenges faced by individuals and communities. |

| | |
|--|--|
| Novy and Leubolt (2005) | Social innovation results mainly from: fulfillment of human basic needs; increase of political involvement of marginalized groups; increase of the sociopolitical capacity and the access to resources needed to reinforce rights that lead to human needs fulfillment and involvement. |
| Rodrigues (2006) | Changes in the way individuals recognize themselves in the world and their mutual expectations, arising from approaches, practices, and interventions. |
| Mulgan (2006) | Innovative activities and services that are motivated by the goal of meeting a social need. |
| Moulaert et al. (2007) | Tool to an alternative vision of urban development focused on the fulfillment of human needs (and empowerment) through innovation in the neighborhood relations and community governance. |
| Mulgan et al. (2007) | New ideas that work in the satisfaction of social goals; innovative activities and services driven by the goal of social need fulfillment and that are mainly developed and diffused through organizations whose primary intentions are social. |
| Geoff, Simon, and Skoll (2007) | New ideas that work in meeting social goals. |
| Phills, Deiglmeier, and Miller (2008) | 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. |
| Pol and Ville (2009) | The new idea with the potential to improve life quality or quantity. |
| Hochgerner (2009) | Social innovations are new concepts and actions accepted by affected social groups that are applied to overcome social challenges. |
| Murray, Caulier-Grice, and Mulgan (2010) | Innovations that are social in both their means and their ends. |
| Howaldt and Schwarz (2010) | Social innovation is a new combination and/or a new configuration of social practices in certain fields of action or social context promoted by certain players with the aim of better fulfilling or answering to the society's problems and needs. |
| Franz, Hochgerner, and Howaldt (2012) | Is the intention to use social practices which distinguishes social innovation from mere social change |
| Moulaert (2013) | New concepts and partnerships to improve efficiency on the one hand and meeting social needs on the other hand |
| Voorberg, Bekkers, and Tummers (2015). | The creation of long-lasting outcomes that aim to address societal needs by fundamentally changing the relationships, positions and rules between the involved stakeholders, through an open process of participation, exchange and collaboration with relevant stakeholders, including end-users, thereby crossing organizational boundaries and jurisdictions. |
| Zebryte and Jorquera (2017) | Specific practices that are legitimized by their intrinsic ability to resolve social and environmental problems. |

Source: Adapted from Bignetti (2011) and Juliani, Juliani, Souza, and Harger (2014).

Considering Table 3, one of the highlights is that social innovation switched from a more individual passive character, to a more active one, where there is the empowerment of the society through this new concept. Nonetheless, the definitions aforementioned do not convey if there is a stratification of the society that will be directly benefited from this social innovation, leaving a gap in the clarification of the term. Therefore, in order to analyze the innovation that generates a direct positive

impact to society, will be considered to the analysis the terms “innovation” and “social impact”.

3 METHODOLOGY

This research is characterized as a systematic literature review. According to Waddington et al. (2012, p. 360) “a systematic review has a clear protocol for systematically searching defined databases over defined time-period, with transparent criteria for the inclusion or exclusion of studies, as well as the analysis and reporting of study findings”.

The criteria used to compile the survey were as it follows (Tranfield, Denyer, & Smart, 2003):

- a) chronological: it did not have search period of restriction to reach all possible work referred on the subject, so it was used throughout the range of databases Web of Science (1900-2018);
- b) terminology: the construction of the search string was made from the selection of key terms in the literature that matched the base "social impact" AND "innovation";
- c) databases: the basis chosen for the search of articles was the Web of Science™ Core Collection (Affeldt & Vanti, 2009; Cruz et al., 2015; Vitorino Filho et al., 2015);
- d) document types: it was chosen to check for articles and reviews, because it works peer reviewed;
- e) language: it was decided to search for articles in English only.

3.1 EXCLUSION CRITERIA

The articles found through search terms were submitted to the following exclusion criteria in order to refine the sample. Initially refinement was performed by reading the abstracts, being considered the following exclusion criteria: those works that did not address the two main themes of this research - “innovation” and “social impact”. The refined sample from these exclusion criteria underwent read the full text to perform the steps of the data analysis. However, if the study did not present adherence to the research topic as well as the absence of the necessary elements for their classification, it would also be deleted.

3.2 DATA ANALYSIS

Data analysis was done in two stages. In the first stage, called as “descriptive analysis of articles”, data were analyzed using one of content analysis techniques,

known as categorical analysis (Bardin, 1977; Govindan, Rajendran, Sarkis, & Murugesan, 2015). Studies were classified into some specific categories: nationality of the authors, main authors, main journals of publication, year of publication, number of citations and most important articles in the sample. Besides that, the VOSviewer software was used in to analyze the co-word maps.

The VOSviewer software was developed to create, visualize and explore bibliometric maps of science (Van Eck & Waltman, 2010). According to Morris and Van der Veer Martens (2008) and Van Eck and Waltman (2010) an important research topic in the bibliometric analysis field is the science mapping, as it has as objective to display the dynamic and structural aspects of scientific research (Börner, Chen, & Boyack, 2003; Morris & Van der Veer Martens, 2008; Noyons, Moed, & Luwel, 1999).

In this work, will be explored the co-word analysis, that, as Callon, Courtial, Turner, and Bauin (1983) explains, when the conceptual structure of the research field is studied through the keywords of the documents from the sample.

4 ANALYSIS OF RESULTS

All the data collection was done in December 2018 aiming to include all the articles published until the end of 2018. The Table 4 illustrates the search results step by step.

Table 4: Sample selection process

| Steps of Exclusion | Papers |
|---|-----------|
| (=) Topic: "Innovation" AND "Social Impact" | 189 |
| (=) Document Type: Article or Review | 134 |
| (=) Languages: English | 122 |
| (-) Papers eliminated by reading the abstract | (24) |
| Total Papers | 97 |

After the collection of the 189 papers initial sample, the evaluation process of the sample was performed. The first step was to limit the works to articles and reviews and by doing that the sample changed to 134 works. Right after that, the step was to limit the language as only English and the sample was reduced to 122 works. To the last step, the titles were analyzed and for those that seemed not to fit to the aim of this research, the abstract was read in order to evaluate that. Those studies that did not fit into the aim of this article were discarded.

In the last step 92 works were excluded, and the final sample consisted in 97 articles for analysis.

4.1 DESCRIPTIVE ANALYSIS OF ARTICLES

This article analyzed, in this first part, as posted by Govindan et al. (2015) and Jabbour (2013), all the data related to: authors nationality, researchers with most publications, journals, year of publication, and citations.

The first point of analysis was the nationality of the author. This information was considered important, once it reflects how much attention each country is giving to the research focused in innovation with social impact. The collected data is presented in Chart 1 and shows that most of the authors (18%) are from England, followed by the United States (16%).

The percentage of authors in these two countries represents more than one third of all the sample (34%), which indicates that the studies in this field are still a bit concentrated in these two countries and starting to spread through the rest of the world, as the smaller percentages are more similar between the other countries, as it can be seen.

One explanation for this movement is the presence of studies centers in important universities in these countries, as the Cambridge Center for Social Innovation and the Center for Social Innovation - Stanford School that gives more attention to these topics.

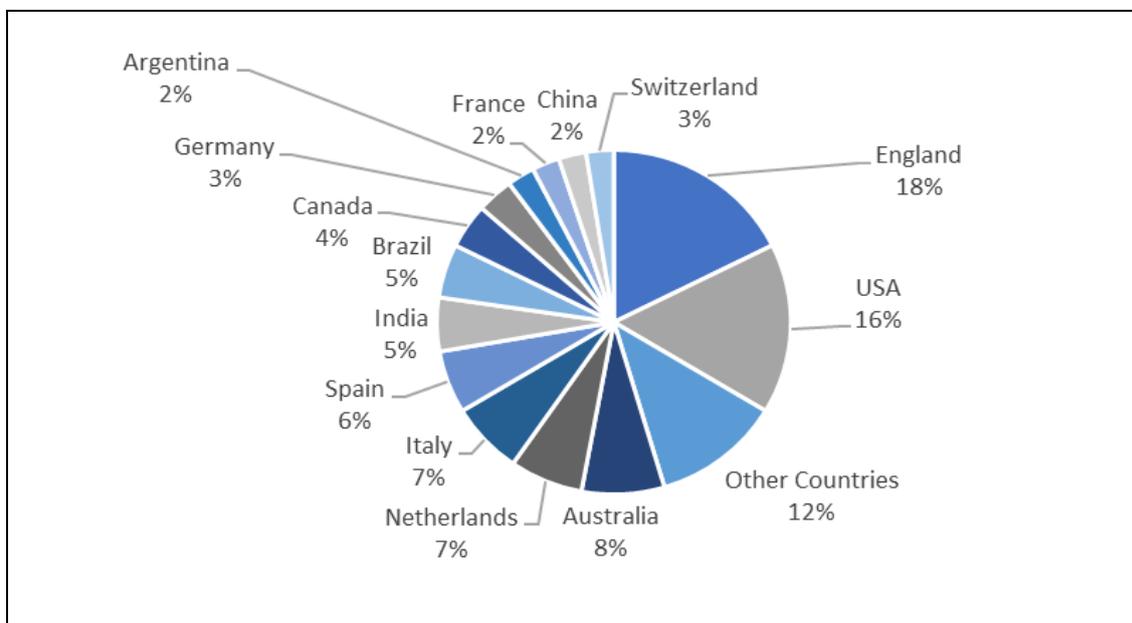


Chart 1: Authors nationality.

When analyzing the articles for each author of the sample, almost all the authors have only one article published in the field, what is an indicative of an emerging subject in the literature. Although that, eight of the authors have provided

a quantitative production superior to the others and Table 5 provides the names and absolute quantities of articles of each author, with the year of publication and the field of study. It is important to notice that some of the authors have published the same article as co-authors, as indicated in the table.

Table 5: Main researchers in the sample

| Researchers | Quantity of Papers | Years | Field of Study |
|---------------------------|--------------------|--------------------|---|
| Fox, C. | 2 | (2011) (2015) | Criminal justice sector |
| Calderini, M. & Chiodo V. | 2 | (2018) (2018**) | Social tech start-ups/Social impact investments |
| Michelucci, FV. | 2 | (2017) (2018**) | Social impact investments |
| Franks, DM. | 2 | (2012) (2013*) | Mining industry |
| Rosa, JCS. & Sanchez, LE. | 2 | (2015) (2016) | Mining industry |
| Vanclay, F. | 2 | (2013*) (2015) | Mining industry/Tourism industry |

*represents the same article/**represents the same article

When analyzing the journals of the publications of the sample, a huge dispersion can be seen, which reinforces the idea that this subject is still emerging and not concentrated in any specific source. Of all the sample, 73.2% of the articles were published in different journals, while the other 26.8% of the sample was concentrated in 9 journals with more than one article published. The relation of the publications and main journals in descending order of representativeness, with the respective absolute values of articles, can be seen in the Table 6.

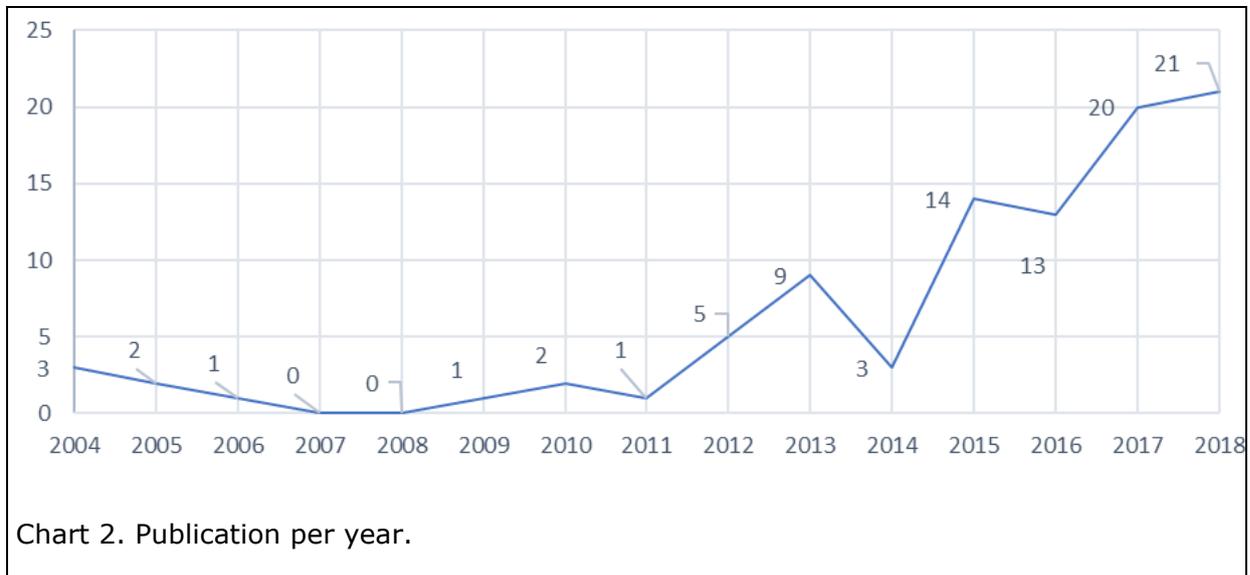
When we give a look at Table 6, it can be seen a that the publications are widely spread through different fields, what has already been said by Cajaiba-Santana (2014). Most of the journals are related to subjects involving entrepreneurship, environmental and social issues, even marketing, but one that stands out is the Criminology Criminal Justice. Concerning the theme related to social innovation and taking a deep look in the field of criminal justice, it can be said that key to the social innovation is the use of the social relations and is often an answer to the most urgent social needs (Fox & Grimm, 2015).

In this sense, arise some different fields of study that integrate social innovation and the criminal justice, and that justifies the presence of this journal in the sample, as for example, the concept of Community Justice that Karp and Clear (2000) proposes, bringing together themes as: restorative justice, prevention and early intervention and community strengthening and self-determination, to reduce the criminal behavior.

Table 6: Main journals sample

| Journal | Number of publications |
|--|------------------------|
| Technological Forecasting and Social Change | 6 |
| Journal of Social Entrepreneurship | 4 |
| Environmental Impact Assessment Review | 3 |
| Sustainability | 3 |
| Criminology Criminal Justice | 2 |
| Journal of Cleaner Production | 2 |
| Journal of Public Policy Marketing | 2 |
| Social Enterprise Journal | 2 |
| Voluntas: International Journal of Voluntary and Nonprofit Organizations | 2 |

Even with no restriction to the period of the publications, the distribution of the articles per year was more relevant from 2012. There were only twelve articles published about the topic before 2012. Chart 2 shows the distribution of articles per year however the oldest articles are from 1967 and 1977. Until 14th of December 2018, the search date, twenty-one articles had been published, more than twice the number of articles published before 2012. This data indicates the idea that the field is new and has not been studied since long.



4.2 EXPLORATORY ANALYSIS OF ARTICLES

4.2.1 Co-word Analysis

The co-word analysis is a technique that is used to understand the strength of relationship between keywords and it measures through the co-occurrence of this words in the text. Stem from that, two different analysis were performed using the

VOSviewer software, in order to get the best results and get a deep understanding of which themes are arising from the sample.

The software was run counting the co-occurrence of the keywords stated as by each author in the articles, with full counting and a four times minimum occurrence. The results are shown in the Chart 3.

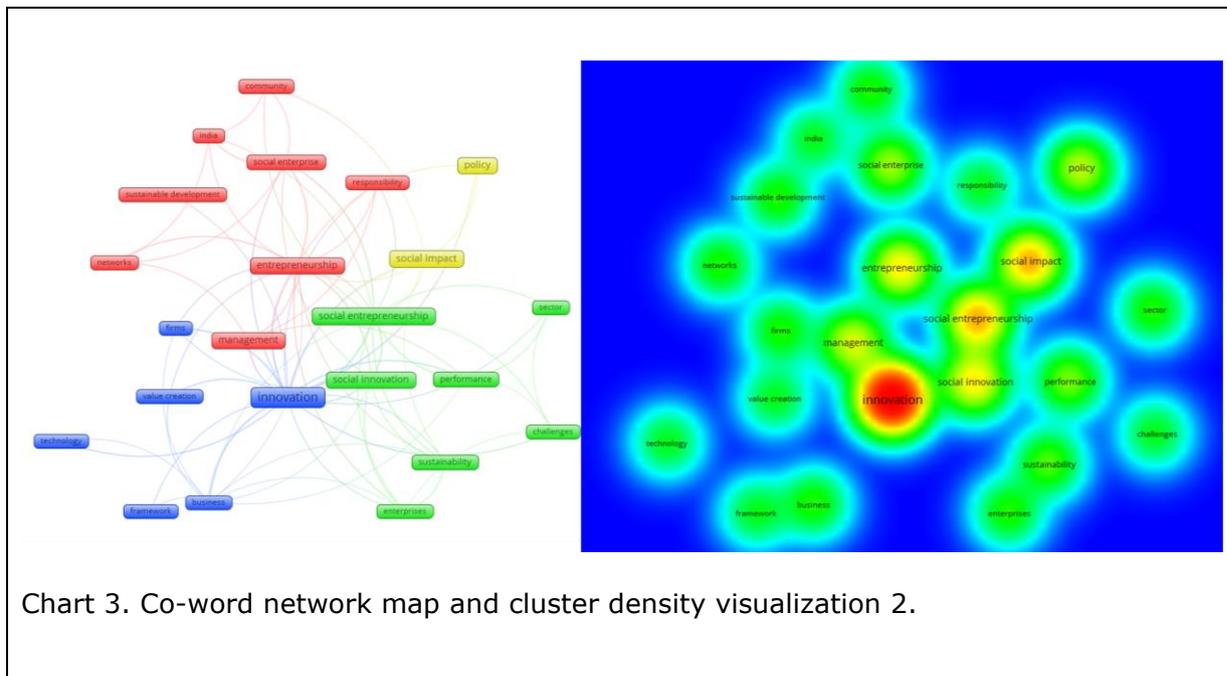


Chart 3. Co-word network map and cluster density visualization 2.

Chart 3 shows the main topics addressed in the articles that cover the innovation and social impact themes. They are social innovation and social entrepreneurship. This result reinforces the discussion of Schumpeter (1934) towards the effect for social and economic changes that innovation and entrepreneurship have when put together. Meeting the social needs is an opportunity to entrepreneurs, that can act attaining inclusive economy and inclusive growth (Hall et al., 2012). It was found twenty-three items that fit in these requisites and four clusters were found. With these restricted results, it was possible to do a deeper analysis of each cluster, as it follows. A detailed description of each cluster can be found in the Table 7.

Table 7: Clusters description of co-word analysis

| | Ecosystem | Results | Operations | Opportunities |
|-------|-------------------------|-------------------------|-------------------|----------------------|
| Items | Community | Challenges | Business | Policy |
| | Entrepreneurship | Enterprises | Firms | Social impact |
| | India | Performance | Framework | |
| | Management | Sector | Innovation | |
| | Networks | Social entrepreneurship | Technology | |
| | Responsibility | Social innovation | Value creation | |
| | Social enterprise | Sustainability | | |
| | Sustainable development | | | |

To better understand the fields of study that arise, it is important to develop a deep analysis of each cluster, identifying main topics.

The first and one of the largest clusters comprise the social innovation “Ecosystem”. The items presented in this cluster shows different stakeholders that together make the junction of innovation and social impact happen. Since the management and the entrepreneurship, considering the importance of the networks, to the sustainable development, which addresses a wider understanding, not only to organizations, but also to the development of public policies throughout the world (Elkington, 1998). In the discussion about sustainable development, the Sustainable Development Goals established by the United Nations for the whole society are important too. The set of goals were created in September 2015, and they are related to end of poverty, protect the planet and ensure prosperity for the whole society. In this cluster emerges the idea of social enterprise, that according to George, McGahan, and Prabhu (2012) arises with the intention of reducing a social problem or a market failure. The name of emerging countries does not show up by accident when the topic is social problems these are the countries that are in the top of the list. In this sense, it is necessary that social entrepreneurs act to solve these problems and create social value.

The second cluster brings the discussion about the “Results” of social entrepreneurship practices. In this context, performance comes together with challenges, and this term is very representative when we are talking about social innovation definitions. These challenges are opportunities to be solved, but can also represent performance threats, as there are many difficulties to get funding for innovative activity, caused by the lack of effective measurement of social and environmental impact, among others important questions that must be better developed. When we go deeper into the Results cluster using the VOSviewer software, we found two relevant items related to performance: social finance and social impact investing (Edmiston, Nicholls, 2018; Fraser et al., 2018). It addresses the financial aspect of social innovation, bringing definitions of ways that this can be performed. Also reinforces the need of implementing ideas with a financial return to be a social innovative practice.

The third cluster is what is called “Operations” and it addresses the practical aspect of social innovation, mainly represented by technology. When multinationals and small and medium enterprises want to address the social and environmental goal, they use the technology to reach benefits for the society from their practices (Kolk, Kourula, & Pisani, 2017). These investments in a more efficient operation

results in a higher value creation based on risk reduction, legitimacy and a higher brand value.

Finally, the last cluster is called "Opportunities". It highlights that the social innovation arises to solve a social problem that the government did not solve. Sometimes, the policy fails into providing education, transportation, healthcare and housing to the society, representing opportunities of problems to be solved. In other times, can be seen as a partner to help the social enterprises grow, by financing them or providing its geographical presence to make the social impact occurs (Schaltegger & Burritt, 2018).

4.3 QUALITATIVE ANALYSIS

The qualitative analysis aims to deepen the analysis of the selected papers for bibliometrics, analyzing the theories presented in the papers of the sample, the concepts of social impact used, as well as what are the innovations used for social impact. For this, a new selection was made within the paper's sample, by the calculation of the article impact factor (AIF), which is calculated by the following equation:

$$\text{AIF} = \text{Yearly average citation} * (1 + \text{JCRIF})$$

According to Homrich, Galvão, Abadia, and Carvalho (2018, p. 530), this calculation allows the selection of "core papers, using both yearly citation and journal relevance in the analysis." The use of this calculation and not the total number of citations is justified by the possible impact factor and citations over the years, where, when using the average citation, there is a lower sensitivity to yearly variations. The information about JCR Impact Factor were retrieved from InCites Journal Citation Reports.

Table 8 highlights the top papers considering the combined impact factor as a proxy of relevance in the sample, emphasizing their research themes and journals.

Table 8: List of the most cited papers

| Authors | Paper title | Journal | AIF |
|---|---|--|------------|
| Lemos and Morehouse (2005) | The co-production of science and policy in integrated climate assessments | Global environmental change-human and policy dimensions | 150,07 |
| Annarelli, Battistella, and Nonino (2016) | Product service system: A conceptual framework from a systematic review | Journal of cleaner production | 75,36 |
| Franks and Vanclay (2013) | Social Impact Management Plans: Innovation in corporate and public policy | Environmental impact assessment review | 31,09 |
| Hu, Kleijn, Bozhilova-Kisheva, and Di Maio (2013) | An approach to LCSA: the case of concrete recycling | International journal of life cycle assessment | 20,78 |
| Bornmann (2013) | What is societal impact of research and how can it be assessed? a literature survey | Journal of the American society for information science and technology | 20,17 |
| Edmiston and Nicholls (2018) | Social Impact Bonds: The Role of Private Capital in Outcome-Based Commissioning | Journal of social policy | 19,57 |
| Rosa and Sánchez (2015) | Is the ecosystem service concept improving impact assessment? Evidence from recent international practice | Environmental impact assessment review | 16,22 |
| Weerawardena and Mort (2012) | Competitive Strategy in Socially Entrepreneurial Nonprofit Organizations: Innovation and Differentiation | Journal of public policy & marketing | 14,97 |
| Boons, Baumann and Hall (2012) | Conceptualizing sustainable development and global supply chains | Ecological economics | 14,69 |
| Fraser, Tan, Lagarde, and Mays (2018) | Narratives of Promise, Narratives of Caution: A Review of the Literature on Social Impact Bonds | Social policy & administration | 14,51 |

Among the top 10 papers of the sample, only two (Edmiston, Nicholls, 2018; Fraser et al., 2018) have similar theoretical bases, focused on the financial area. The others vary from product service system to competitive strategy, without a consolidated basis of authors and theories.

When analyzing the definitions of social impact used by the top 10 papers, it was observed that half of them do not describe the definition they are using, another two (Edmiston, Nicholls, 2018; Fraser et al., 2018) define "social impact bond" in their analysis. As Fox and Grimm (2015) addresses, the innovation in financing is common through social innovators, and, for example, in the UK, Social Impact Bonds are catching much attention as its considered an innovative financial instrument in the social innovation field (Arena, Bengo, Calderini, & Chiodo, 2016). It can also be related to the fact that England had 18% of the publications of the sample.

About the definitions, an article uses the definition of social impact assessment, and only two make the definition. The first to define social impact is the paper of Rosa and Sánchez (2015), which brings the work of Slootweg et al. (2003) saying there are two kinds of social impacts.

Firstly, those social impacts that result directly from the project through a social change process, e.g., those associated with involuntary resettlement. Secondly, the social impacts that result from change on ecosystems or biophysical environment. An example of this second type is water pollution causing the decrease of fish population and diversity and consequently affecting the income and sources of food of human communities (Rosa & Sánchez, 2015, p. 136).

The second work is the Bornmann (2013, 218) and says that "since social benefits are hardly distinguishable from the superior term of societal benefits, in much literature the term 'social impact' is used instead of 'societal impact'". This paper uses the term societal impact and says that

societal impact is frequently an impact which only becomes apparent in the distant future. Thus, societal impact is not a short-term phenomenon; it is mostly concerned with intermediate (e.g., partnership-based cooperation, new/improved products) or ultimate (e.g., improved industry competitiveness) returns.

Finally, a topic that emerged from the analysis of the top 10 papers was the financial question behind the practical combination of the two themes. The examples of financial innovations with a focus on positive social impact reinforce the fact that when the social entrepreneurs agree to take on challenges for impact generation, it takes much more than pre-existing theoretical knowledge about business management. According to Herrera (2016, 1725) innovation for impact "involves

breakthrough changes in how businesses operate, providing a lens for understanding and addressing underserved markets, and leveraging approaches focusing on the market to address social concerns”.

5 FINAL CONSIDERATIONS

This paper contributes to the literature by exploring the intersection between “social impact” and “innovation”. The bibliometric analysis shows the importance of developed countries in the research about the issue. This fact opens room for more investigation of the phenomenon in emerging countries, where most of the corporate social responsibility is philanthropic (Cuypers, Koh, & Wang, 2015). Besides, it would be relevant to analyze the practices of social enterprises in emerging countries and the importance of this kind of enterprise for the whole economy.

Based on the co-word network map, stands out the importance the theme social entrepreneurship has had in academic papers, where the new challenge of measuring the socio-environmental results of these businesses is a concern (Arena, Azzone, & Bengo, 2015).

Our research question was: what subjects emerge when integrating “social impact” and “innovation” in the scientific literature? Based on this, it should be noted that the main subject that emerges from the analysis was the financial question. Both in the bibliographic and the qualitative analysis of the 10 top papers, it was noticed that as a theoretical basis and practical example of social impact innovation, the financial innovations stand out. It is observed that there is a need for a change in both: financial paradigm and in the way of doing business, to create a business ecosystem that allows the social impact to happen.

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