HOW SOCIAL INNOVATION PROJECTS ARE MANAGED? ANSWERS FROM A LITERATURE REVIEW

¿CÓMO SE GESTIONAN LOS PROYECTOS DE INNOVACIÓN SOCIAL? RESPUESTAS DESDE UNA REVISIÓN DE LA LITERATURA

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Abstract: Social innovations (SI) are solutions that simultaneously meet a social need and lead to new or improved society capabilities. Although SI have been one alternative to modern societies challenges, little evidence is found on how this process occurs, including methods and tools. This research analyses the state of art in the academic research on the development of SI projects through a systematic literature mapping related to the development of SI projects. Main findings are that SI development processes - from ideation to implementation and scalability - are not completely described, little detailed information exists about the use of methods and tools, lack of implementation results, and very limited knowledge can be found on how organizations develop capabilities to manage SI projects. This paper brings to the SI research community a landscape of approaches already used in SI projects management, giving ground to a research agenda in the field.

Keywords: Social innovation, social innovation development, systematic literature mapping.

Resumen: Las innovaciones sociales (IS) son soluciones que satisfacen simultáneamente una necesidad social y generan capacidades sociales nuevas o mejoradas. Si bien las IS han sido una alternativa a los desafíos de las sociedades modernas, se encuentra poca evidencia sobre cómo ocurre este proceso, incluidos los métodos y las herramientas. Esta investigación analiza el estado del arte en la investigación académica sobre el desarrollo de proyectos de IS a través de un mapeo bibliográfico sistemático relacionado con el desarrollo de este tipo proyectos. Los principales hallazgos revelan que los procesos de desarrollo de la IS, desde la ideación hasta la implementación y escalabilidad, no se describen completamente, existe poca información detallada sobre el uso de métodos y herramientas, faltan resultados acerca de la implementación y se encuentra un conocimiento muy limitado sobre cómo las organizaciones desarrollan capacidades en la gestión de proyectos de IS. Este documento, brinda a la comunidad investigadora del campo de IS un panorama sobre los enfoques utilizados en la gestión de proyectos de IS, dando paso a una agenda de investigación.

Palabras clave: innovación social, desarrollo de la innovación social, mapeo sistemático de la literatura.

Introduction

Innovation has driven advances in productivity and economic growth. While it is true that the contributions from innovation have not only been economic it is also true that much of the thrust and focus of efforts to mobilize innovation have focused on economic objectives (OECD, 2011). But technological and other innovation outcomes appear to be ineffective as compared to social innovation in addressing complex social, economic, political and environmental challenges (Altuna et al., 2015) (Howaldt et al., 2016).

Policymakers, non-government organizations, charities and entrepreneurs across the world have shown increasing interest in "social innovation" as a means of addressing

various problems, from poverty and homelessness to environmental degradation (The Economist Intelligence Unit, 2016). The importance of Social Innovations (SI) is highlighted by OECD (2011, p. 20) as responses to unsolved or inadequately met social problems and needs which have been unsuccessfully addressed by government or commercial market. At its core, and a crucial distinction from business innovation driven by market forces, social innovation contains a socio-economic and cultural dimension focusing on social change to fill gaps in provision that neither the state nor the private sector has been able to identify or close (Mulgan, 2006; Altuna et al., 2015).

SI has a central role in the European Union (EU)'s Europe2020 strategy towards smart, sustainable and inclusive growth. This includes the flagship initiative 'Innovation Union', where innovation is regarded not as merely industrial, but rather as a means to update society's capacity to organize, act and respond on the persisting challenges of growth, and to capitalize on knowledge generation and transfer opportunities provided by new technology (European Commission, 2016).

In recent years, SI has emerged, both in its research and development dimensions: SIs appear in a variety of forms and influence our lives. They change the way people live together, travel, work or handle crises, and are driven by different societal sectors and cross-sectoral networks (Fuger et al., 2017), (European Commission, 2013) (OECD, 2011).

Although a lot of interest is placed on SI, there exists limited knowledge on how government, no-profit or for-profit organizations develop social innovation projects. This paper presents a systematic literature mapping that has sought to identify how SI projects are developed, from idea to escalation. Results of this literature review shows SI development processes are not completely described, giving ground to a research opportunity in the field.

The remainder of the paper is organized as follows. Section 2 provides a brief background on SI and its six-stage process. Section 3 details the search protocol and the research questions from this literature mapping study. Section 4 presents the synthesis results of the data extracted from the selected studies and answers the research questions. A discussion of the results of the systematic mapping is presented in Section 5. The article ends with a proposal for future work in SI and a summary of the conclusions.

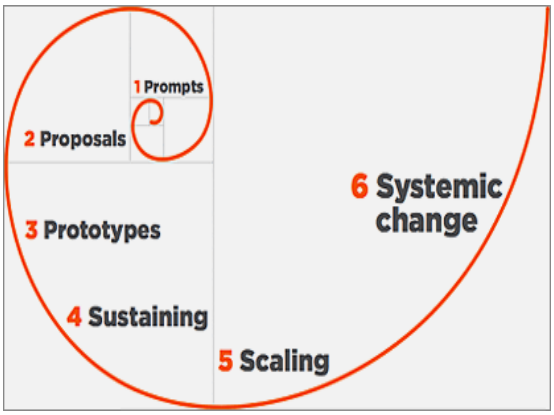
1. Social innovation

Currently, no definite consensus exists on the term 'social innovation'. A range of definitions and interpretations are available, in which linguistic nuances and different social, economic, cultural and administrative traditions play a role. For the purpose of this research, we used the definition provided by the research project TEPSIE (The Young Foundation, 2012), widely adopted by a large number of academic and policy documents: **'social innovations are new solutions (products, services, models, markets, processes etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources. In other words, social innovations are both good for society and enhance society's capacity to act'.**

According to Araujo & Chueri (2017), a SI must match the following criteria: it must 1) be new with regard to the user, context or application, although not necessarily original; 2) generate an improvement which could be translated both into a satisfactory result that would demonstrate efficiency, as well as into an achievable alternative to the already existing solutions; 3) should be able to generate value to the community or to a specific group; 4) is a result of a process that is divided into multiple stages (beginning as an idea until implementation); 5) enhances society´s capacity to act.

SI typically is a result of a process with several stages (European Commission, 2013) (Figure 1). In order to study the application of tools and techniques in the development of SI projects, the six-staged model conceived by Mulgan (2006) and illustrated by Caulier-Grice et al (2012) was chosen, which is more detailed than the others found in the literature (Westley and Antadze, 2010) (European Commission, 2013), (Cunha and Benneworth, 2015), as well as the most cited (584 citations) according to Google Scholar:

Figure 1. The process of SI.



Source: (Caulier-Grice et al., 2012)

- **Prompts:** Prompts highlight the need for innovation. Sometimes, these come in the form of unexpected changes in the immediate external environment: a sudden environmental or political crisis (Hurricane Katrina led to the founding of several social initiatives such as the New Orleans Institute for Resilience and Innovation; violence following elections in Kenya in 2008 prompted software designers to establish Ushahidi, a platform for crowdsourcing information via text messages sent in by people on the ground, enabling organizations to plan crisis responses). Prompts may also come in the form of a longer-term crisis which becomes more acute and demands action. Emergence of new evidence, data or research can also provide a major prompt.
- **Proposal:** The second stage involves generating a new idea that provides a solution to the identified need. In some cases, this stage will follow on naturally from the identification of need (working with the same group and research techniques to identify potential solutions). At other times, it might involve a new practice or technique.
- **Prototyping - testing the idea in practice:** Ideas are introduced and then adjusted in light of experience. Experimentation, rapid learning, trial and error are all important elements of the innovation process. These mental frames have given us the 'supply push' and 'demand pull' theories of innovation, but innovation is rarely a straightforwardly linear process. Rather, it involves a constant interaction between demand and supply, potential users of the innovation and their suppliers.
- **Sustaining:** Taking an idea that has shown promise as a pilot or prototype and turn it into an established initiative which can be sustained over time. This means developing an economic model that will secure the venture's financial future.
- **Scaling and diffusion:** Routes to growth – from organizational growth to licensing and franchising to federations and looser diffusion. Some of these approaches involve organizational growth. Others involve much more organic processes of diffusion, with ideas spreading and adapting rather than growing through a single organization.
- **Systemic change:** SIs are inherently about changing the way things are done and the way social needs are conceptualized. Systemic change is the ultimate goal, even if very few SIs reach this stage, and even whether some SI are aimed to remain local or regional.

SIs do not necessarily go through all six stages. In some cases, SIs remain small in scale and are locally based, rather than attempting growth and scale, and very few SIs reach the stage of systemic change (Caulier-Grice et al., 2012). In other cases, especially online, SIs can skip out stages entirely, quickly going from prototyping to scaling and only then exploring business models and revenue streams. While this six-stage process does not capture the often messy nature of developing and growing SIs, it does provide a very useful analytical framework with which to think through the range of different activities that take place and the support and resources required at each stage.

2. Research Method

Systematic Mapping Studies are designed to provide a wide overview of a research area, to establish whether research evidence exists on a topic and provide an indication of the amount of evidence. (Kitchenham et al., 2007). The research method adopted in this study is based on the approach presented in Brereton et al (2007) and on the quasi-systematic review presented in Magdaleno *et al* (2012), considered as an exploratory study, designed to characterize a research area. The survey follows a well-defined sequence of steps (planning, execution and report), defined in a mapping protocol. The

mapping protocol used in this research is detailed in Annex I.

2.1. Scope

The objective of this study is to identify all supporting elements used during the development of a SI project aiming at answering the following main (MQ) and secondary questions (SQ):

MQ: How are SI projects developed?
SQ1: What are the challenges in SI projects?
SQ2: What methods and technological solutions have been applied for SI projects?
SQ3: What results have been achieved by communities and government when SI projects are developed?

3. Search Results

Table 1 shows the number of items returned from the digital libraries selected in the review during each step of the filtering process. The first search round in each of the selected digital libraries Scopus, IEEE, Compendex and Web of Science was performed in June 2017. The second search round, specific for Google Scholar, was performed in September 2017. The reading of the 28 papers remained after the filtering process helped us to answer each research question as follows.

Table 1. Filtering process

	Scopus	Compendex	IEEE Explore	Web of Science	Google Scholar	Total
Results of search engines	215	46	30	144	141	576
After duplicates excluded	213	1	9	49	69	341
After title and abstract filter	74	0	1	10	72	157
After text available filter	52	0	1	4	45	102
After content filter	14	0	1	1	12	28

Source: own elaboration

3.1 MQ: How are SI projects developed?

Although SI is studied based on distinct theoretical and methodological angles, the conditions under which SIs flourish are developed, and sustained, finally leading to societal change, are not yet fully understood both in political and academic circles (Howaldt et al., 2016). This statement was proven true during the deep analysis of the retrieved papers. From all the papers studied, no consensus was found on the stages and steps described during the development of a SI project. Even when the term "project" was identified, most of the papers did not explain the project into detail, only emphasizing some particular stage, or telling a story about it based on interviews (Harrisson, 2012), (Nemes, 2017) (Rocle and Salles, 2017). Table 2 presents the result considering which phases are approached by each one considering the six-staged model conceived by Mulgan (2006).

Neumeier (2017) presents a SI process based on a participatory process divided into three distinct stages: 'Problematisation', 'Expression of interest' and 'Delineation and co-ordination'. Problematisation is the identification of a need by a small group of actors, triggered by an initial impetus, external or internal to the actors involved (like a threat or impairment, emotional issues, or themes of interest to potential regional actors). This need leads to initial groups of actors looking for solutions to the identified need. Expression of interest: other actors join the core group of actors as they see advantages by taking part on it. Delineation and co-ordination: interested actors negotiate the new form of collaborative action/organization.

Table 2. Social development stages in literature review

Paper	Prompts	Proposal	Prototyping	Sustaining	Scaling and diffusion
Neumeier, 2016	X	X			
Schaffers et al, 2009		X	X		
Obata, 2012		X	X		
Fuger et al, 2017	X	X			
Rensburg et al, 2016		X	X	X	
Marti et al, 2016		X	X		
Altuna et al, 2015		X	X	X	
Ferrario et al, 2014		X	X		
Westley et al, 2014					X
Mazzarella et al, 2017	X	X			
Chou, 2017	X	X			

Source: own elaboration

Schaffers et al (2009) presents a methodology using living labs as an instrument for SI in rural areas and displays a model that comprises four major stages: ´Preparation', ´Prototyping examples and limited scale experimentation', 'extensive application development and field experiments', 'user-led co-creation'.

Obata et al (2012) presents a case study where the Fujitsu Lab researchers chose a participatory design method for conducting a Product Development project on SI for the aging society. They used the four phases presented by the MUST method. In the Initiation phase the main objectives are clarifying project objectives and the resources set aside to meet them. Stakeholders are to be identified, the project organization is formed, and an initial plan is produced. In the In-line analysis phase the main objective is clarifying and adjusting project relation to business and strategies related to information technology in order to identify the domains to be focused. In the In-depth analysis phase the purpose is to develop a detailed understanding of the domains and to establish a basis for prioritizing problems, needs, and ideas for improvements. Finally, in the Innovation phase the purpose is developing coherent visions for change including prototypes, ideas for re-organizing the work in question, an overview of new qualifications if needed, and a plan for visions.

Fuger et al (2017) presents an initiative using a crowdsourcing approach to SI and to improve conditions of low income communities, comprising four phases. The "research phase" has the aim of motivating all participants to share inspirations, stories, tools and successful examples on the challenge topic. In the "idea phase" participants were asked to propose solutions to the given problem. Best ideas were then selected via an applause phase by the community and experts to advance to the "refinement phase" where the community collaboratively refined those ideas. In the "evaluation phase", final ideas are selected to be funded.

Rensburg et al (2016) presented an approach for managing multi-stakeholder participation and community engagement in a science and technology research environment. The project is defined based on the needs of the community and framed by the broad themes identified (food resilience, and access to clean water and sustainable energy). During project initiation, the objectives and key performance indicators are identified and aligned with those of the institution and its employees. A key to the development and implementation of community-based projects was the establishment of the R&P (Research and Project Office) in the engineering faculty to manage community-driven research projects.

Marti et al (2016) developed the Experiential Design Landscapes (EDL) method, a design

research method aimed at designing for, and with people, in their natural environment, to find ways to support them in structurally changing their behaviour on a local scale and to address global societal issues in the long run. EDLs are environments, be them physical or virtual, which are part of society (e.g., designated areas in cities, sports parks, virtual platforms, etc.) in which a design research team meets people in their everyday lives. The EDL method is based on four processes: i) envisioning, ii) designing interventions, iii) acquiring data, and iv) analysing and validating this data.

Altuna et al (2015) presented a case study where the SI development process comprises four stages: i) Explorative phase, which leads to the identification of the social need to be addressed; ii) Strategic design, during which the intervention model is defined and where and how to change and innovate the process is decided; iii) Operative design, where the implementation of the intervention model occurs, the specific features of the new service are defined and the eventual system developed; and (iv) Launch and management, which consists in the launch of the new service in its operating management.

Ferrario et al (2014) describe a project management framework, which integrates agile and iterative development methods with approaches, namely Action Research (AR) and Participatory Design (PD). This framework aims to enable software development with an emphasis on SI in tightly constrained environments in a four-step process model: i) The Prepare step is grounded on Action Research principles and deploys qualitative research methods for initial user requirement capture; ii) the design step embeds Action Research and Participatory Design principles into the design process and aims to visualize and design systems which can address user needs; iii) the build step adopts a more traditional agile approach with short development cycles; it further refines user requirements and concludes with the release of a stable technology prototype; iv) The sustain step where wider partnerships are sought to support prototype long-term development and deployments.

Westley et al (2014) proposed a model with five distinct pathways of scaling up SIs shaped by: i) approach to change is revealed in the way an organization perceives its goals for change, and its vision of how institutions and structures could be altered to respond to particular social needs; ii) strength refers to the special advantages of the organization's chosen change strategies; iii) challenge refers to the difficulties inherent in the chosen change strategies which may hinder a move toward tackling system-level goals; iv) pathway for scaling up describes openings perceived by the organization for moving from scaling out to scaling up, conditioned by their earlier strategies and choices; v) risk refers to the inevitable downside associated with any chosen pathway for scaling up.

Chou (2017) proposed applying the design thinking method into social projects. The design thinking process is defined through three spaces which can be overlapped: i) inspiration is the cause of searching for solutions, such as social problems or possible opportunities appeared to surface; ii) ideation is the process of identifying ideas, developing and deepening targeted ideas and then testing them through experimentation or simulation; iii) implementation, which places selected project into the realization stage.

Mazzarella et al (2017) proposed a service design framework which supports the initial stages: Ideation and Design. This framework include multiple service design and co-design data collection methods were adopted as they complemented each other: ethnography (current state of the art of the local context), storytelling, sense making and co-creation.

3.2 SQ1: What are the challenges in SI projects?

The diversity of challenges faced by SI projects development are categorized in the following dimensions: Political, Processual, Institutional, Environmental, Human, Financial and Infrastructure (Table 3). The most cited challenges are related to the actors: lack of competencies, capabilities and skills to successfully develop SI projects and lack of engagement/commitment/involvement (locals, sponsors, social entrepreneurs and others). It is clear that the SI process requires attention to individuals; to what they think, to what they value, to how they behave, and to how interrelations between actors and social systems take place. Another challenge is lack of incentives and support in municipal, state and

local policies. Since SI bears, as a main goal, causing positive impacts on society which sometimes involves a change in legislation, it is expected that this kind of innovation may, in some cases, depends on government support. The number of challenges related to procedural and human dimensions is remarkable, thus proving that this is an area that presents several gaps in the whole development process and demands additional research.

3.3. SQ2: What methods and technological solutions have been applied for SI projects?

The methods and technological solutions identified were organized in Table 4, according to the SI stages where they are applied, mainly according to the purpose of each phase (Mulgan, 2006). Most of the occurrences of methods reported are located during the Proposal stage. This demonstrates that an effort exists to use methods and generate ideas and proposals for SI. It is common to hear about challenges, ideas, competitions, hackathons, and other initiatives dedicated to discuss and raise proposals for important societal issues. On the prototyping stage, most of the methods used were not detailed in the paper where they were mentioned. There was lack of reporting on how the SI projects were developed, managed and how the relationship between the SI actors during the development.

About technological solutions, only a few were reported. Marti et al (2016) reports the importance of interconnected products and services ecosystems, in order to successfully cope with the complexity of social challenges, although specific features of a supporting technological solution are not described. Schaffers et al (2009) proposes a platform based on open service-oriented architecture that allows for reusing and sharing services and applications.

Most of the papers did not mention how the project would be managed according to scope, cost, time or stakeholder management. Rensburg et al. (2016) was the only paper which proposed a Research and Project Office responsible for project operational requirements and ensured that project deliverables are met to specification and within budget. Ferrario et al (2014) was the only paper that mentioned the use of a project management methodology (PRINCE), but the paper didn´t presented detailed information according to this topic. Additionally, there was lack of information on how the SI project was assumed to be integrated with all the organizations and institutions involved. Although some papers had reported lack of funding or government support, there was no mention as to the adoption of methods to deal with this issue.

3.4 SQ3: What results have been achieved by the communities and government when SI projects are developed?

The main results achieved by SI projects were categorized in terms of the impact: impact on innovation system and sectoral strength, impact on regional policy instruments, business and entrepreneurship impacts, improvement of social and individual wellbeing (Table 5). Half of the papers mentioned information related to the impact or consequence of the SI project, most of them are related to economic impact.

4. Main findings

This systematic literature mapping raised a number of important observations:

Underdeveloped status of conceptualization of SI: wide multiplicity of SI definitions was observed according to its concepts and process. There is no shared understanding of SI is to be had, including clear differentiation from other concepts such as social entrepreneurship or technology innovation.

Reports on the development of SI projects: a scarcity of reports about the development of SI projects was ascertained. Although significant effort has been expended in approaching a definition for the term ‘social innovation’, little attention has yet been paid to the mechanisms that made it happen.

Focus on Proposal stage: most of the papers mentioned processes and methods related to the Proposal stage demonstrating that this stage may display higher level of maturity compared to the others. It may also portray projects emphasis on generating innovative ideas and not yet attention to their implementation and sustainability.

Lack of development details: considering that "Prototype" stage comprises development and prototyping activities, it was observed that, from the papers which mention activities related to this stage, only a few presented more information on prototype construction.

Lack of project management practices: most of the papers did not mention how the SI project was managed according to scope, cost, time or stakeholder management. Moreover, the monitoring aspect of these projects was not clear.

Open innovation paradigm: since SI involves the participation of several actors from different organizations and different sectors, it is natural that open innovation paradigm appears in this literature mapping. This paradigm pursues the collaboration of external resources (volunteers, innovation communities, third sector institutions, universities) which potentially create value for the project. Non-profit organizations and entrepreneurs represent an external source of new ideas, by bringing complementary competencies, such as knowledge of societal needs from particular disadvantaged social categories.

Government participation: Success is somehow dependent to government support. When government decides not to support the project anymore, the SI initiative faces difficulties.

Social actor engagement: The most-cited challenges are lack of competencies, capabilities and skills to successfully develop SI projects, and lack of actors' engagement/commitment/involvement (locals, sponsors, social entrepreneurs and others). These results are in line with the Social Innovation Index Report (The Economist Intelligence Unit, 2016), where the biggest barriers for SI are lack of time and talent to reach the best work done. Information related on what techniques and tools are used to maintain actors involved and how they relate and communicate along the project was also missing.

Table 3. Key challenges for SI projects

Key Challenges for social innovation projects development			
	Category	**Challenge description**	**Papers**
1	Political	Lack of incentives and support in municipal, state and local policies	(DUFOUR *et al.*, 2014), (TELLO-ROZAS, 2016), (QUANDT *et al.*, 2017), (ROCLE & SALLES, 2017),
2	Processual	Involvement of users in the design process	(FERRARIO *et al.*, 2014), (MARTI *et al.*, 2016)
		Lack of engagement/commitment/involvement of actors (locals, sponsors, social entrepreneurs and other)	(DUFOUR *et al.*, 2014), (FERRARIO *et al.*, 2014), (JUDIT *et al.*, 2016), (FUGER *et al.*, 2017), (NEMES, 2017), (STOKES *et al.*, 2017)
		Lack of understanding and measurement of social innovation impact	(STOKES *et al.*, 2017)
		Lack of common vocabulary and understanding between all the actors involved	(DAVIES & GAVED, 2017)
		Project management issues	(OBATA *et al.*, 2012)
		Gathering feedback to enable comparative evaluation of the pilots	(DAVIES & GAVED, 2017)
		Tools and techniques for engaging stakeholders in analysis and design	(OBATA *et al.*, 2012)
3	Institutional	Alignment of goals and priorities	(OBATA *et al.*, 2012), (RENSBURG *et al.*, 2016)
		Risk-averse and cautious organisational cultures of administrations	(NEUMEIER, 2017)
		Lack of planning for growth and developing sustainable business models	(STOKES *et al.*, 2017)
		Lack of institutionalisation	(JUDIT *et al.*, 2016)
		Changes in the project team (when an actor leaves the project)	(DUFOUR *et al.*, 2014), (TELLO-ROZAS, 2016), (MAZZARELA *et al.*, 2017)
		Institutional change	(RENSBURG *et al.*, 2016)
		Pursuing a scaling up pathway	(WESTLEY *et al.*, 2014)
4	Environment	Dependence on its local context	(JUDIT *et al.*, 2016)
		Lack of serious partners to dialogue with and the unavailability of partners to work with	(ALTUNA *et al.*, 2015)
		Lack of clarity about the return on investment.	(GASCÓ, 2016)
		Closed systems favouring single-issue solutions developed within clusters of organisations lacking mutual awareness, communication, networking and trust	(NEUMEIER, 2017)
		Participation of non-profit organizations	(ALTUNA *et al.*, 2015)
5	Human	Resistance to proposed changes	(DUFOUR *et al.*, 2014)
		Dependence on the individual, the agentic engine, who initiates and carries out the innovation.	(JUDIT *et al.*, 2016)
		Reluctance of some members to establish trust and dialog with outside institutions	(QUANDT *et al.*, 2017)
		Lack of human resources	(GASCÓ, 2016), (HOWALDT *et al.*, 2016)
		Lack of competencies, capabilities and skills to successfully develop social innovation projects	(DUFOUR *et al.*, 2014), (WESTLEY *et al.*, 2014),), (ALTUNA *et al.*, 2015), (HOWALDT *et al.*, 2016a), (NEUMEIER, 2016), (RENSBURG *et al.*, 2016), (NEMES, 2017), (STOKES *et al.*, 2017)
6	Financial	Availability and accessibility of funding	(HOWALDT *et al.*, 2016), (STOKES *et al.*, 2017)
7	Infrastructure	Issues related to network communications performance, quality and reliability among several distributed heterogeneous data (video, voice, images, text, etc.) entities	(MARCHETTA *et al.*, 2012)

Source: own elaboration

Table 4. Methods according to SI development stage.

Methods according to social innovation development stage	
Social Innovation Stage	**Method and Paper**
Prompts	Ethnography, Storytelling, Sensemaking, Co-creation workshops, Roundtable discussion (Mazzarella et al., 2017)
Proposals	Design Thinking (Chou, 2017) (Matsushita et al., 2015) (Tello-Rozas, 2015) (Garcia et al., 2010) (Rensburg et al., 2016) Hackathon (Tena-Espinoza-De-Los-Monteros, 2016) Ethnography, Storytelling, Sensemaking, Co-creation workshops, Roundtable discussion (Mazzarella et al., 2017) Public-Private Partnership (P3) (Abe et al., 2016) Design Science Research methodology (Rensburg et al., 2016) Communities of Practice (Rensburg et al., 2016) Agile development (Ferrario et al., 2014) (Schaffer et al., 2009) Action Research (Schaffer et al., 2009) (Ferrario et al., 2014) Data-enabled design (Marti et al., 2016) Experiential Design Landscapes (EDL) method (design research method) (Marti et al., 2016) Prince2 Management methodology (Ferrario et al., 2014) Participatory Design (Ferrario et al., 2014) (Obata et al., 2012) Open development model in form of a crowdsourcing initiative (Fuger et al., 2017)
Prototypes	PPP : Public Private Partnership (Abe et al., 2016) Design Science Research methodology (Rensburg et al., 2016) Communities of Practice (research, teaching and community engagement) (Rensburg et al., 2016) Experiential Design Landscapes (EDL) method (Marti et al., 2016)
Sustaining	PPP: Public Private Partnership (Abe et al., 2016) Open development model in form of a crowdsourcing initiative (Fuger et al., 2017)
Scaling	

Source: own elaboration

Table 5. Key Impacts for the development of SI projects.

Key Impacts for the development of social innovation projects			
#	**Impact categories**	**Description**	**Papers**
1	Impact on innovation system and sectoral strength	Improvement of information technology infrastructure availability and capacity due to enhanced attractiveness of rural area. Strengthening the local industry-university cooperation.	(SCHAFFERS *et al.*, 2009)
		Activation of regional economy and employment increases locally.	(ABE *et al.*, 2017)
		Several new co-operations, joint strategic thinking, planning in the field of rural tourism were identified, and local networks were significantly developed.	(NEMES, 2017)
		Social networks development and improved information flows have enhanced the development capacity of the whole region, thus benefitting everyone	(NEMES, 2017)
2	Impact regional policy instruments	Impact on regional development plans and part of economic development mechanism in the region.	(SCHAFFERS *et al.*, 2009)
		Recycling law has been approved to regulate the activities of informal recyclers	(TELLO-ROZAS, 2016)
		Success of the initiative prompted municipal authorities to try to copy it in other neighbourhoods	(TELLO-ROZAS, 2016)
		Build trust and social learning in local policy networks where experimentation occurred.	(ROCLE & SALLES, 2017)
3	Business and entrepreneurship impacts	New business possibilities in different sectors under the umbrella of new market regulation. Several examples related to business related cost and/or time savings	(SCHAFFERS *et al.*, 2009)
		Locals have their own webshop, and also deliver to five restaurants, some bio-shops, bakeries	(JUDIT *et al.*, 2016)
		More than 2,500 entrepreneurs and small technological-based enterprises had participated in the project from which 75 functional prototypes were produced	(TENA-ESPINOZA-DE-LOS-MONTEROS, 2016)
		Generating jobs and income within the cooperative territories so that farmers could improve their quality of life, as well as place sustainability.	(QUANDT *et al.*, 2017)
		Inhabitants have found many business opportunities connected to the folktale route	(JUDIT *et al.*, 2016)
		Initiative obtained high consideration by different stakeholders thereby attracting more economical resources	(SCHAFFERS *et al.*, 2009)
4	Improvement of social and individual wellbeing	Seniors involved are not afraid of technology anymore Increasing of number of citizens with innovation competencies and skills.	(GASCÓ, 2017)
		Launching of new initiatives to improve other aspects of living conditions in Cerro el Pino.	(TELLO-ROZAS, 2016)
		Improvement, perceived by the students, of linguistics and communication skills, self-direction and positiveness, a spirit for challenge, cooperation and flexibility, a sense of responsibility and mission, understanding of other cultures, sense of identity, sense of social contribution to local people and communities	(MATSUSHITA *et al.*, 2015)
		Increase in local human capital has been observed. The inclusion of capacity-building activities as an important element of the initiative has helped to improve the skills of some local community members.	(TELLO-ROZAS, 2016)
		Many stakeholders have recognized the positive effect of the exploratory reflection they conducted, thus allowing coproduction of knowledge and a questioning of critical assumptions about the future of their activity, their city and their lives.	(ROCLE & SALLES, 2017)

Source: own elaboration

Technological solutions to support the development process: only a few were reported, and they focus on technological platforms to support the SI ecosystem, although these supporting platforms features are not yet clearly defined.

Results time-frame: No time restriction was placed on the search, but the majority of results date from 2012-2017, showing a degree of novelty of this research field and the need for more scientific research on the topic. The field gained interest after the global financial crisis in 2008.

Social innovation results: most papers do not present any information related to the impact (positive or negative) of SI developed. Those which reported some impact, showed mostly economic results.

Conclusions

This paper reported a systematic literature mapping in the field of social innovation (SI), with the goal of identifying the state of art on the development of SI projects. 28 papers from a gross total of 576, were selected and evaluated. It was shown that research on several topics related to the development of SI projects is still scarce. SI development processes - from ideation to implementation and scalability -are not completely described, no detailed information exists about the use of methods and tools, lack of implementation results, lack of project management information, and very limited knowledge on relationship between social actors or on how skills can be developed to manage SI projects.

This raises the question: why are there so few studies presenting the development of SI projects? Probably, this is so because SI may not be seen by all authors and researchers as the result of a development process, considering that these projects are conducted in an ad-hoc basis. Based on the fact that a project is an endeavour undertaken to create a unique product or service and that many authors identify SIs as a response to the greatest social challenges that the world currently faces, why do not consider the development of a SI as a temporary endeavour undertaken to create a unique social product or social service, that is, a project? Or maybe it is an open project once it is developed crossing organizational boundaries?

Considering that there are thousands of SI initiatives around the world (Howaldt et al., 2016), methodological approaches which improve and support this development process, engage the actors, support knowledge exchange, and respect the requirements of this type of innovation, have the potential to increase the number of SI projects that reaches implementation, escalation and, in the end, effective social impact.

To take into account the complexity of SI, further research is needed for proposing development methodologies considering an environment formed by multiple actors, the local context needs, the relationships between actors, where cross-sector collaboration is crucial to overcome social demands and societal challenges, actively involving public, economic and civil society partners (Howaldt et al., 2016). Probably these solutions call for significant collaboration and co-creation methodological and technological solutions based on participatory design and a human-centred approach.

What is clear is that SI is already a force for positive change in many developed and developing markets alike; that it is being incorporated in public and private administration, analysed by a variety of , and pursued by entrepreneurs and investors. Future studies related to its development process will raise the positive results achieved by this type of innovation.

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Annex I - Litterature Review Protocol

Scope

The literature review scope was defined according to the PICO approach (Pai et al., 2004, apud Magdaleno et al., 2012), which structures the research question into four basic elements: i) **Population:** academic papers reporting experience with the development of social innovation projects; ii) **Intervention:** process, methods, methodologies; iii) **Comparison:** not applied in this study; and iv) **Outcomes:** Activities performed during each social innovation development stage, challenges for social innovation development, tools, methods or methodologies used during social innovation development; and results obtained from social innovation projects development.

Search strategy

The search strategy included the following electronic databases: Scopus, Compendex, IEEE Xplore, and Web of Science. The ACM Library, despite its importance, overlaps with the IEEE Xplore library; its content is also indexed by the Scopus library. As social innovation has received attention from many organizations and foundations globally, and Google scholar contains many reports generated by these initiatives, decision was made to include a sample of documents from this electronic database.

Keywords

Keywords were constructed considering (Kitchenham et al., 2007): terms in population and intervention (Section 3.1.2); alternative spellings and synonyms for these terms.

The complete list of keywords used in this systematic literature mapping is given below. Population and intervention are the same to the main question (MQ) and to every secondary question (SQ), since these comprise subsets of the main question.

Research questions keywords, according to PICO:

- Population: “social innovation project” “social innovation implementation”
- Intervention: methodology, technique, network, ecosystem, method, process, framework
- Comparison: not applied.

Inclusion and exclusion criteria

This mapping includes every article returned by the protocol which meets **at least one of the following criteria for inclusion** (IC) and does not meet any of the criteria for exclusion (EC):

- IC1—Documents must address social innovation;
- IC2—Documents must discuss challenges for the development of social innovation projects;
- IC3—Documents must present proposals for the development of social innovation projects;
- IC4—Documents must report experiences from organizations or communities which have implemented one social innovation.

Publications satisfying at least one of the following EC were excluded:

- EC1—Documents not written in English;
- EC2—Documents whose full text is not available;
- EC3—Documents not addressing the development of social innovation projects;
- EC4—Documents clearly dealing with topics irrelevant to the purpose of this mapping;
- EC5—Documents addressing social innovation, but focusing on legal or social aspects and not on the development process itself;
- EC6—If the same study has been published more than once, the most relevant version (i.e., the one explaining the study in greatest detail) will be used and the others will be excluded;
- EC7—If a given study has been selected for a broader research question, it must be excluded from the list of selections for the narrower research question.

Selection Process

The process related to the selection of articles occurred in four steps: i) Selection and preliminary organization of selected documents: preliminary selection of publications was made by applying the search string to selected data sources; ii) Selection of relevant papers: primary selection using the search string. After the identification of publications via search engine, documents were retrieved in view of the inclusion and exclusion criteria; iii) Evaluation of relevant papers: the other author evaluated the list of documents selected; iv) Information extraction from relevant documents: after defining the final list of relevant documents, one of the authors read the latter to extract information on how social innovation projects are developed.