





How social start-ups avoid being falling stars when developing social innovation

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The aim of this study is to provide new insights into the social innovation (SI) development process in the context of social start-ups. A multiple case study identifies the issues and mechanisms for social start-ups to develop a social need into a potentially scalable innovation and to validate and scale it up, while avoiding a possible failure. Results show that key challenges faced by social start-ups can be characterized according to the stage of the SI development path. Firstly, social start-ups' failure can be caused by the lack of expertise in social problems and of flexible processes for social ventures creation; secondly, by the lack of awareness of SI benefits and proper resources allocation; and, finally, by a weak understanding of the impact and intangible outcomes of the developed SI in society, while ensuring its economic sustainability. Successfully overcoming these challenges requires social start-ups to put in place the following mechanisms: (1) leveraging a vision and motivations that balance tensions in terms of the radical, economic and cultural aspects of SI; (2) engaging the SI stakeholders in different (and sequential) phases of SI development process; and (3) identifying and adopting the most suitable technological, financial and communication tools in an integrated way.

KEYWORDS

case study, process, social innovation, start-up, success

1 | INTRODUCTION

Innovative ideas that target unmet or newly emerging social issues represent an opportunity to create new business models, initiate start-ups and improve the transfer of knowledge (Nicolopoulou et al., 2017). A social start-up (SS) can be defined as a start-up knowingly founded with the aim of meeting a social challenge, often with a disruptive innovation, and thus introducing a positive social impact (Bocken, 2015; Maiolini et al., 2016). SSs play a vital role as possible agents of change as they offer ground-breaking solutions to complex societal issues overlooked or unsuccessfully addressed by existing organizations (Hoogendoorn et al., 2017; Turker & Vural, 2017). They

can create value for society by leveraging collaborations that often occur in spontaneous innovation ecosystems (Cacciolatti et al., 2020; Maase & Bossink, 2010), adopting specific technologies, tools and activities (Maiolini et al., 2016) and sustaining business growth with opportune resources, for example, finances (Arena et al., 2018).

Nevertheless, start-ups that pursue a social mission face higher risks and potential failure rates due to smallness and newness liabilities, as well as to the peculiar complexity and contextual dimensions of societal challenges (Cajaiba-Santana, 2014; Martinez et al., 2017). Difficulties in accessing financial funding, or in joining strategic alliances and networks, are mainly due to the investor scepticism and the lack of shared knowledge to align the start-up's values with several

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stakeholders (Cacciolatti et al., 2020; Lettice & Parekh, 2010). Moreover, there is a lack of references for measuring the outcomes of innovations aimed at social change and thus the new social value created (Edwards-Schachter & Wallace, 2017; Morris et al., 2020).

Social innovation (SI) can be defined as the development of innovative products, services or processes aimed at meeting a social need, with the opportunity to create new social relationships among actors that collectively engage in purposeful actions to achieve a positive, systemic social change (Altuna et al., 2015; European Commission, 2013; Lettice & Parekh, 2010). In the ever-changing socio-economic environment, an analysis of the contextual dynamics of SI must include the unique nature and structure of the participants, the processes and the complexities involved (Nicolopoulou et al., 2017; Turker & Vural, 2017). Despite the wide interest of the specific factors enabling SI, the development process in the context of SS, that is, the start-ups founded to pursue a social mission, remains understudied (Piccarozzi, 2017). More recent literature recognizes their pivotal role in exploiting innovation opportunities by focusing on the support and value of strategic alliances thanks to SS' 'out-of-the-box propositions' (Babu et al., 2020; Sansone et al., 2020). These contributions do not consider the point of view of the start-ups themselves or their efforts in developing their ideas into potentially scalable solutions while avoiding failure. Indeed, SS firms enter the innovation process specifically to address a social challenge and set up their organization to incorporate social aspects for value creation and development (Adams et al., 2016; Maase & Bossink, 2010). Enablers of growth (and causes of failure) for SS are researched from the perspective of human capital (Bennett, 2016), strategic alliances (Cacciolatti et al., 2020) and ability to achieve new goals (Sharir & Lerner, 2006). A wider investigation on the challenges encountered and the mechanisms undertaken in the SI development process is missing. Therefore, this study aims to understand how SSs develop their innovative ideas and sustain their social value proposition, while reducing risks of failure and thus being 'falling stars', in their start-up process. We integrate the perspectives of the SI process and the innovation development stages of start-ups to formulate the following research questions:

- RQ1. What are the main challenges faced by an SS along the SI development process?
- RQ2. Which mechanisms can an SS employ to avoid failure of a developed SI?

In order to answer these research questions, a case study research is conducted among six Italian SSs that successfully developed SIs. Based on within-case and cross-case analyses, an interpretative framework of challenges and mechanisms in the SI development process of SSs is developed and several propositions are posited.

2 | THEORETICAL BACKGROUND

The SI process and the emerging issues of SS, especially in the initial phase, should be studied in a different context than large established companies (Marion et al., 2012).

Firstly, the ability to scout and identify unsolved social needs is mainly driven by creativity and a strong motivation from individuals (Dawson & Daniel, 2010). Building capabilities to scan opportunities and enter the innovation ecosystem to combine the necessary tangible and intangible resources is also fundamental (Turker & Vural, 2017; Westley & Antadze, 2010), considered the liabilities of smallness and newness of start-ups (Bennett, 2016; Criscuolo et al., 2012). In the case of social enterprises, the expected impact of innovations is aligned with their social mission; however, the different views and values of stakeholders must also be considered (Lubberink et al., 2018). Therefore, the first issue in SI development can be identified as the *definition of vision and motivations*. These can be formulated as the strategies, concepts and capabilities fundamental to identify and prioritize social challenges and properly position the business to realize social value.

Secondly, a successful SI requires effective mechanisms to identify interrelations between key stakeholders to facilitate the co-creation of SI (Gallouj et al., 2018; Herrera, 2015). External sources and stakeholders of SI should be involved in highly interactive networks, with different levels and grades of relationship, to realize the *stakeholder engagement* needed for value co-creation and knowledge diffusion (Altuna et al., 2015; Maase & Bossink, 2010). For example, Turker and Vural (2017) show that the key actions carried out by social enterprises include training, networking, educating, lobbying, organizing and raising awareness. Shin (2016) highlights that building partnerships requires collaborative entrepreneurship at the local level, specifically among the local community, the firms and the public sector.

Finally, SI can be conceptualized as 'a collective creation of new legitimated social practices' (Cajaiba-Santana, 2014, p. 49), and SSs need to adopt different (systematic) means to manage the transformation of their initial ideas into an SI (Adams et al., 2016; Lubberink et al., 2018). This requires the application of tools to support constructive decision-making, practical co-operation and assess the effective SI development (Dawson & Daniel, 2010). To enable and increase the magnitude of social innovative activities (Maase & Bossink, 2010), SSs need to effectively exploit financial instruments, such as crowdfunding, microfinance and social bonds (Arena et al., 2018; European Commission, 2013), and technologies, such as social platforms and e-commerce. Therefore, the *adoption of tools*, that is, different means, instruments, techniques and technologies for decision-making and SI development, constitutes a third emerging issue for successful SI development.

Basing on this analysis, Table 1 synthesizes the main issues of SI implementation to be considered by social enterprises, especially in their start-up phase.

The SI development process in SS can be modelled as the path from the ideation of an innovative solution that shapes societal demand into a new product, to the development of a social value proposition that actually solves the social problem (Morris et al., 2020). Value creation must then be extended with collective actions for scalability and sustainable growth of the SI and the social enterprise itself (Murray et al., 2010; Vézina et al., 2018).

To identify the key stages of innovation carried out in the early establishment of an SS, this study builds on (1) the process model of Nair and Blomquist (2019) that analyses the practices to prevent and manage failure of start-ups from a value creation perspective; (2) the development stages and factors of start-ups by Santisteban and Mauricio (2017); (3) the process of SI by Mulgan (2006) and Murray et al. (2010); and (4) the capabilities for SI of Vézina et al. (2018). We integrated the key concepts and process stages of the five contributions into a four-stage SI development process for SSs, as shown in Figure 1 and described below.

The first stage starts with the formalization of a promising idea into a possible social transformation project, after the formation of a founding team and the identification of an unsatisfied social demand (Mulgan, 2006; Santisteban & Mauricio, 2017; Vézina et al., 2018). At this stage, the potential scalability of the innovation and a feasible business model for the SS should be

proved, drawing from the insights and experiences of a wide range of knowledge sources (Murray et al., 2010; Nair & Blomquist, 2019).

A second stage entails the need of investments (Santisteban & Mauricio, 2017) to properly prototype and pilot test the SI (Mulgan, 2006; Murray et al., 2010), establish the general boundaries of the product or service and eventually proceed with reworking (Nair & Blomquist, 2019) and validate the SI with end users and other stakeholders (Vézina et al., 2018).

The third phase involves refining the innovative solution that addresses a social challenge in practice and its assessment (Mulgan, 2006; Murray et al., 2010). This requires obtaining important supports (especially funding) and developing technological and business capabilities to sustain the solution and its marketing, while reaching the right proof points for consolidating the SS business (Nair & Blomquist, 2019; Santisteban & Mauricio, 2017).

TABLE 1 Main issues for SI development process in a SS

Issues	Definition	Examples	References
Definition of vision and motivations	<i>Strategies, concepts and capabilities to identify and prioritize social challenges and realize social value</i>	Creativity, trust, alignment with social mission, allocating specific resources for SI	Adams et al., 2016; Cajaiba-Santana, 2014; Dawson & Daniel, 2010; Lubberink et al., 2018; Turker & Vural, 2017; Westley & Antadze, 2010
Stakeholders engagement	<i>Raising awareness, involving, identifying interrelations and building partnerships with the other actors of the social system for value co-creation, knowledge and innovation diffusion</i>	Consultation, knowledge sharing, partnerships, networking with other companies, local communities, public institutions	Altuna et al., 2015; Gallouj et al., 2018; Herrera, 2015; Lettice & Parekh, 2010; Shin, 2016
Tools adoption	<i>Means, instruments, techniques and technologies for decision-making, practical co-operation and SI development</i>	Training, education, reflection, negotiation, financing mechanisms, digital technologies	Adams et al., 2016; Arena et al., 2018; Dawson & Daniel, 2010; European Commission, 2013; Maase & Bossink, 2010; Turker & Vural, 2017

Abbreviation: SI, social innovation.

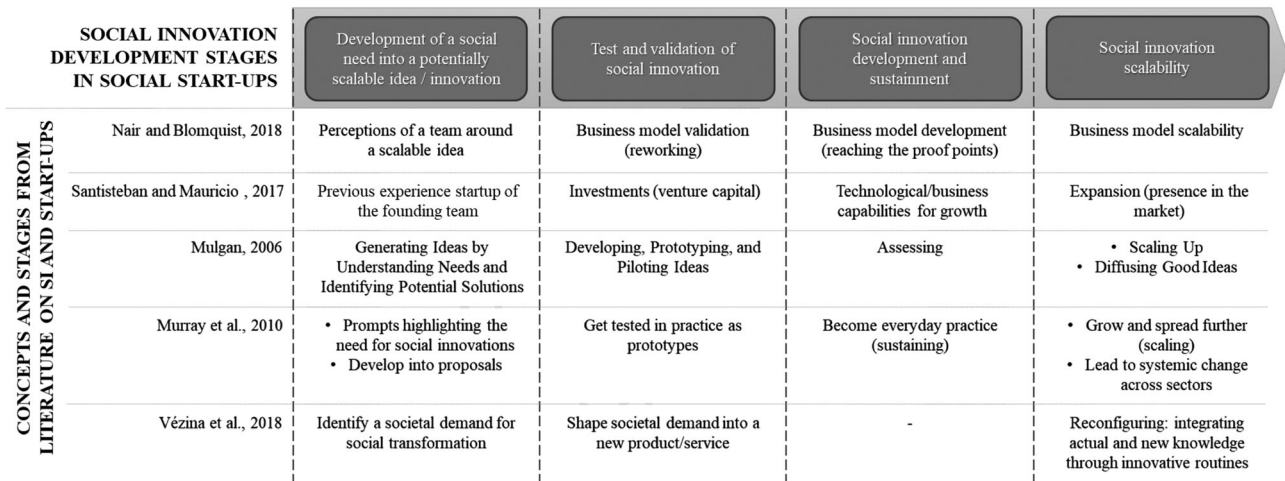


FIGURE 1 The social innovation (SI) development process in social start-up

Finally, the SI can be revised to be replicated, spread and therefore scaled up (Mulgan, 2006; Murray et al., 2010), therefore expanding the business (Mulgan, 2006; Nair & Blomquist, 2019). At the stage of SI scalability, the SS has reached an important presence in the market and in the society (Santisteban & Mauricio, 2017) and systematically involves external actors to combine mainstream and unconventional knowledge (Vézina et al., 2018).

3 | METHODOLOGY

This research employed a multiple case study design for exploration purposes (Yin, 2013). For data collection, a deliberate theoretical sampling was performed to observe and compare patterns and logic in the SI development process (Eisenhardt & Graebner, 2007). Key criteria established to select cases were (1) being a start-up, for example, a new venture founded to create a new product/service addressing unmet needs, with the potential of surviving and scaling their business; and (2) being set up with the explicit aim of introducing an SI, that is, having the primary purpose of introducing a positive social impact through the development of a new or improved product to solve a social problem. We searched for innovative start-ups, whose mission and developed solutions were explicitly aimed at solving a social issue, in the Italian Register of Innovative Start-ups. Out of more than 5000 innovative start-ups recorded, only 46 indicated having an explicit 'social mission' and developed innovations addressing it. Obtaining sufficiently detailed information about this sample was challenged by the absence of websites or contact information due to the newness of the start-ups (Crisuolo et al., 2012). The initial sample was further reduced to active and successfully growing start-ups, for example, start-ups participating in collaborative initiatives to scale the developed SI. The final sample included six SSs that were sufficiently heterogeneous in terms of business (for- or non-profit), type of

industry, kind of SI and international/national/local reach. The selected SSs were introduced by a team of entrepreneurs with the primary purpose of carrying out an SI process to be sustained by a well-identified organization or business. Every start-up developed an innovative solution in its respective industry, in terms of enabling technology (Cases A and D), product (Case B), service (Cases C and E) or process (Case F). These explicitly addressed specific problems in target population segments, such as children (Cases A and F) and deaf people (Case B), have charity aims (Case C) or represent means to support other socially focused initiatives (Cases D and E). As described in the results, the six SSs activated mechanisms to involve the relevant stakeholders (with respective local, national or international scope) to maximize the social impact and survive. Start-up A was founded with the aim of providing a new dimension to 'liveability' in cities and developed an application targeted to children to meet the needs defined by parents and teachers. The SI for Start-up B was an advanced communication tool for deaf people that received attention from the telecommunication industry for its innovativeness. Start-up C was established with an innovative business model to sustain charity projects in the local social system by utilizing unexploited synergies between stakeholders. Start-up D received a prize for the social achievement of its SI, which included a research and development (R&D) innovation (solutions for optical tools for microtechnologies and nanotechnologies), but was primarily aimed at creating a positive social impact. Start-up E was created with the mission of promoting the local environment and developing a sustainable lifestyle using an innovative marketing mechanism. Start-up F used an innovative educational model based on digital solutions after collecting insights on the unmet needs of children in the current educational offerings. Table 2 reports the main features of the selected cases.

Multiple sources of data were used in order to increase the information base and reduce possible biases (Yin, 2013). Specifically, data were collected from semi-structured interviews with key informants

TABLE 2 Main features of the selected cases and interviewees' positions

Cases	Industry/main activity	Business	Social innovation	Scope	Interviewees' position
Start-up A	Urban well-being and social care	Not-for-profit	Web application for improving children lifestyle in urban contexts	National	CEO, internal developer
Start-up B	Telecommunications	For-profit	Advanced communication tool for deaf people	International	R&D manager, external relations manager
Start-up C	Advertising and marketing	For-profit	Service for financing charity projects by citizens' consumptions in local shops	Local	Marketing manager, external relations manager
Start-up D	Optical tools for scientific research	Not-for-profit	Advanced solutions for sustaining research activities in microtechnologies and nanotechnologies	International	CEO, internal developer
Start-up E	Publishing activities	For-profit	Editorial and online marketing service to promote local eco-sustainability	Local	CEO, marketing manager
Start-up F	Education	Not-for-profit	Educational laboratories with adoption of smart toys	National	CEO, laboratories' organization manager

Abbreviation: R&D, research and development.

of the SS and subsequently triangulated with publicly available data from press reviews, company websites and archival documents. Informants were selected among the key roles actively involved in the SI development process (details in Table 2). Semi-structured interviews were conducted with two interviewees per company, reaching a total of 12 phone interviews with an average duration of 1 h. Despite the threats of subjectivity and bias in considering a limited number of informants from each company, it should take into account that in social enterprises there are a small number of individuals that generally play multiple roles (Marion et al., 2012).

An interview protocol was designed to ensure coherence and consistency and to guide the process of data gathering (Yin, 2013). Questions were formulated to investigate emerging issues and practical actions aimed at developing SI while avoiding failure. We included semi-structured questions in order to contextualize data collected from each specific business area and to capture the temporal evolution, that is, their application in the stages identified in Figure 1. We organized the questions in three main sections. The first section refers to vision and motivations for SI and includes questions on vision and foundational values towards SI, societal need addressed, opportunities and motivations, long-term strategy to overcome pitfalls and main factors limiting SI development, application and diffusion. The second section refers to stakeholders and encompasses questions on target users, main partners and institutions, factors or entities contributing to or threatening the SI development process. The last section refers to the tools for SI development, including questions on available or new tools adopted to overcome challenges and develop the innovation, main funding sources and other types of support.

Collected data were analysed following a two-step procedure, involving a within-case analysis and a search for cross-case patterns (Voss et al., 2002). We constructed a display where we systematically

presented the coded data on challenges and mechanisms characterizing the steps of the SI development path. Then we iterated between the emergent constructs and the theoretical background by investigating similarities and differences between groups of codes. The result was an interpretation framework to identify the main challenges driving potential failure and the main practices and determinants to sustain and scale the SI development process in new ventures.

4 | RESULTS

The main concepts arising from the within-case analysis (and some quotations) are summarized in Table A1.

This section describes each stage of the SI development process (as reported in Figure 1) in terms of challenges and mechanisms put in place by the six SSs to avoid a possible failure of the developed SI. Interviewed SSs demonstrate employing mechanisms to overcome these challenges with reference to each issue in SI development, that is, definition of vision and motivations for SI, stakeholders engagement and tools adoption. Overall results of the cross-case analysis are shown in Figure 2.

4.1 | Development of a social need into a potentially scalable idea/innovation

4.1.1 | Challenges

For the first stage, the cases confirm that developing an SI in the context of an SS entails strategic challenges, in particular *a need for faster and flexible processes for creation of new social ventures*. Some

SOCIAL INNOVATION DEVELOPMENT STAGES IN SOCIAL START-UPS		Development of a social need into a potentially scalable idea / innovation	Test and validation of social innovation	Social innovation development and sustainment	Social innovation scalability
CHALLENGES		<ul style="list-style-type: none"> ➢ Need of faster and flexible processes for creation of new social ventures ➢ Lack of experience of founding teams with social issues 	<ul style="list-style-type: none"> ➢ Need to make understand benefits of SI ➢ Lack of awareness of founding teams in resources allocation 	<ul style="list-style-type: none"> ➢ Understand intangible outcomes of SI ➢ Overcome common view of SI as something "in addition" to "due to" ➢ Need to consider economic sustainability 	<ul style="list-style-type: none"> ➢ Overcome deeply-rooted economic paradigms and established alliances ➢ Understand wider impact of SI
MECHANISMS TO AVOID FAILURE					
Definition of Vision and Motivations		<ul style="list-style-type: none"> ❖ Focus vs. flexibility in scope and purpose ❖ Incremental vs. radical innovation 	<ul style="list-style-type: none"> ❖ Integration of technological aspects ❖ High initial costs vs. long-term benefits 	<ul style="list-style-type: none"> ❖ Business vs. community value ❖ Measure impact vs. embeddedness 	<ul style="list-style-type: none"> ❖ Culture towards systemic win-win solutions ❖ Experience vs. knowledge sharing
Stakeholders Engagement		<ul style="list-style-type: none"> • Provide detailed information on their needs 	<ul style="list-style-type: none"> • Provide feedbacks for improvement • Venture capitalists and similar support • Collaborative projects with universities and research centres, industrial partners 	<ul style="list-style-type: none"> • Increase awareness to promote SI paths • Educational role of universities • Collaborations with industrial partners • Local institutions favouring entrepreneurship 	<ul style="list-style-type: none"> • Recognise indirect and wider outcomes • Co-creation with public and no-profit sectors • Alliances with companies in other sectors integrating SI in their vision
Tools Adoption					
TECHNOLOGICAL		<ul style="list-style-type: none"> ❑ Online platforms, e.g. crowdsourcing 	<ul style="list-style-type: none"> ❑ Web applications ❑ Prototypes of advanced technological tools 	<ul style="list-style-type: none"> ❑ E-commerce platforms ❑ Easy-to-use technologies enabling autonomy 	<ul style="list-style-type: none"> ❑ Database collecting best practices
FINANCIAL		<ul style="list-style-type: none"> ❑ Social bonds and other supporting measures 	<ul style="list-style-type: none"> ❑ Application to funding schemes 	<ul style="list-style-type: none"> ❑ Targeted funds to sustain innovative start-ups 	<ul style="list-style-type: none"> ❑ Long-term financial supporting structure
COMMUNICATION		<ul style="list-style-type: none"> ❑ Communication means to identify social problems 	<ul style="list-style-type: none"> ❑ Public contests ❑ Collaborative pilot projects 	<ul style="list-style-type: none"> ❑ Integration of services and training 	<ul style="list-style-type: none"> ❑ Participation to and organization of events to both sell and promote SI

FIGURE 2 Challenges and mechanisms in the SI development process of SSs

interviewees (Cases B and C) highlighted the positive attitude of the Italian context in enhancing SI, due to mature legislation and welfare of the third sector. Nevertheless, the poor networking of SI initiatives and activities, especially at the local level, results in fewer opportunities for faster and flexible development processes. Case E highlighted the great flexibility that characterizes SI and its potential adaptability to many different contexts, contrary to the rigidity of the environments that should support it.

Moreover, another issue is a *lack of experience of founding teams with social issues*. In the first phases, they struggle in making their value proposition clearly understandable and aligning all involved stakeholders, which is necessary to properly develop the innovation. The interviewees of Cases D and E underlined the lack of awareness and preparation towards SI and its impact of both the start-up and some stakeholders. Case D highlighted that the entrepreneurial team needs to gain experience before implementing SI, in order to develop the right vision and smart management. Case E interviewees noticed that the team needs cultural preparation for SI, necessary to properly develop its own business and then to spread the innovation. A past experience in a socially focused organization, such as a charity, would allow the team to become familiar with the norms and the distinctive features of the business. For example, due to previous experience in the third sector, one of the interviewees (Case B) noticed the value of their SI in integrating the interests of different groups.

4.1.2 | Vision and motivations for SI

The analysed SSs focused their vision on the widespread social outcomes and the type of innovation to be developed. All interviewees provided a clear definition of intangible outcomes: considered the different challenges to be addressed and the stakeholders to be involved, the outcomes are much wider than the new product they deliver. Case C calls for sustainable, inclusive and value-generating capitalism, where the SI is a key foundational element. For example, developing a social need into a potential innovation requires a specific purpose and scope, as well as the possibility to change in due course (*focus vs. flexibility of purpose and scope*). For Case A, SI creates and shapes new economies based on the centrality of individual needs (and not products). Similarly, for Case F, the SI needs a culture addressed towards digitalization and social impact, enhanced by formal structures. For Case B, faster processes and the flexibility for new venture creation are lacking. Case D underlined the need to initially focus the business model on specific sectors, while thinking of a product/service with multiple purposes.

Another issue concerns the *radical or incremental nature of SI*. An interviewee of Case C stated, 'For me, SI is something radical; it is not requesting a donation in a different way [...] in my opinion individuals who come from for-profit sectors can practice SI in a radical way, while those who are not-for-profit can practice it in an incremental way', with an apparent dichotomy between for-profit and not-for-profit organizations in contributing to social problems. According to Case D, team experience in the for-profit sector helps sustain SI as a

radical innovation. Instead, one of the Case E interviewees conceives SI as incremental: 'innovation does not necessarily mean reinventing the wheel, but also adopting the currently available tools to convey new messages'.

4.1.3 | Stakeholders engagement

Citizens and local community are the main target groups to be actively involved from the initial phases. For instance, Case B contacted several citizens (i.e., deaf people) to detect their social discomforts and disadvantages in order to understand the possible usability of the application to be developed. Beyond target users, other consumers and citizens can *provide detailed information on their specific needs*. Case A argued that it was fundamental, collecting detailed information from several citizens to capture the requirements for urban well-being.

4.1.4 | Tools adoption

Considering the involvement of the wider community, Case B highlighted the role of *communication means* (e.g., media such as the television) to identify unmet social needs. Cases D and F leveraged available *online platforms* for monitoring market trends and citizens' needs and for *crowdsourcing* to collect ideas and foster knowledge exchange among target groups.

In the search for initial funding in the idea generation stage, Case B cited the social bonds promoted in some European countries, aimed to raise funds for developing ideas with positive social outcomes. Case E highlighted the need for more opportunities and simplified procedures for applying and funding innovative start-ups with social aims.

4.2 | Test and validation of SI

4.2.1 | Challenges

After conceptualizing an SI addressing a clear social need, interviewed start-ups were able to define specific implementation and testing projects to be carried out in collaboration with different kinds of stakeholders. They confirmed a clear awareness of their own limitations and the requirements to properly develop and test an SI in the first phases. In particular, the SS *needs to communicate the benefits of SI*. As reported by the interviewees, there is a need for innovative solutions that foster sustainable economic growth and enable target users to understand the wider benefits of SI. Case A highlighted the importance of understanding that SI can even boost the relationship between the city and the citizens and contribute to solve worldwide problems, such as hunger. Case E had to overcome the barriers of existing organizations perceiving SI as a threat to their market share or lacking awareness and knowledge of SI impacts.

Another challenge is the *lack of awareness of founding teams in resource allocation*. Case C interviewee argued that social entrepreneurs often have difficulties in resources allocation, despite that they know that ‘what stands behind’ innovation (e.g., business sustainability) is important. A professional experience in the sector or type of innovation, as well as the sharing of knowledge with institutions and other companies, can help to overcome this problem. For example, Case F’s team has a background in both digital technologies and the service sector, and the interviewees from Cases D and E have expertise in innovation management.

4.2.2 | Vision and motivations for SI

During the testing, the analysed SIs were mainly focused on the technological content of SI and the pursue of start-up sustainability beyond expenditure recovery. In particular, Cases B, D and F argued that the development of an innovation addressing different social needs should *integrate the technological aspects*. These include the adoption of tools with a high technological content for developing prototypes, testing the delivered services or introducing smart products. In addition, the SIs highlighted that an SI normally has *high initial costs* despite the *social long-term benefits*. One of the Case A interviewees claims that SI means ‘creating a new economy that starts from the concept and the centrality of the individual, overcoming the view of people as consumers and developing solutions aimed to satisfy the most popular needs of different social categories’. Case B suggested that a change in the mindset is fundamental to accept initial high expenditures in exchange for lower future costs. Case D underlined the need to consider expected outcomes in terms of savings, speed and width of SI adoption.

4.2.3 | Stakeholders engagement

During testing and validation of a proposed solution, it is crucial to receive *feedbacks for improvement* from key stakeholders. Cases B and E highlighted continuous knowledge sharing with target users (e.g., the local community for Case E) as key to collect responses. Case D included universities and research centres as both main customers and partners in *collaborative projects* to develop an SI mainly aimed at supporting scientific research. This open approach allowed maximizing efficiency and efficacy of the validation phase. There was also revealed the need to build short-term collaborations with other highly technological industrial partners to develop prototypes. Pilot testing could be performed in a highly dynamic environment supported by incubators, business angels or a venture capitalist, as in Case B.

4.2.4 | Tools adoption

Especially in the prototyping stage, SIs adopted a series of tools that are up to date, suitable and multipurpose, suitable to their

propensity to innovation and business scalability. The majority of interviewed SIs integrated the use of *web applications* (e.g., based on artificial intelligence in Case B). Others adopted *advanced technological tools* enhancing autonomy and flexibility in the development of prototypes (Case D) or to support services testing (Case F). Case A organized *public contests* to test its SI and collect suggestions for improvements, whereas Case E leveraged targeted events as a key opportunity to promote and revisit their SI by deepening knowledge, enhancing awareness and integrating different contexts. Other opportunities include short-term *collaborative pilot projects* developed with other start-ups or industrial partners, as in Case B.

Focusing on financial supports, Cases C and D were able to test and validate their innovation thanks to successful *application to funding schemes* at the European level, whereas Case B leveraged a seed investment from a large telecommunication company to test, develop and sell the SI.

4.3 | SI development and sustainment

4.3.1 | Challenges

Cultural challenges should be overcome to sustain the SI in the long term. Firstly, all stakeholders need to *understand the intangible outcomes of SI*. Interviewees from Case C argued that they face a difficulty ‘to align the languages of non-profit, business and citizens’, which is a key input for the success of its innovation. The entire network must try to *overcome the common view of SI as something ‘in addition’ and instead view it as something ‘due to’*. Interviewees referred to substantial barriers in reaching (and even building) consensus, as SI is perceived ‘as a threat to actual shares in the market’ (Cases D and E) and something ‘in addition’ (as claimed by Cases A and B). Case C suggested that companies should look for sustainable, inclusive and value-generating capital, where SI is something ‘due to’ in the long term. Moreover, Case D had to overcome ambiguity and resistance towards SI from opportunistic behaviours or improper application of the SI.

While developing SI, interviewed start-ups were able to reframe the long-term sustainability of their business. They highlighted the need to have a good SI prototype and also to take it to market with a long-term strategy by *considering economic sustainability*. This represented a major challenge for Case B as its main outcomes are intangible, that is, in terms of guarantee of service and savings compared with existing solutions. In Case C, the company needed to sustain the social enterprise with own funds beyond donations. Case D aimed to be pervasive and to maximize utility of its solutions for optical tools for microtechnologies and nanotechnologies by testing the possible sustainability when adopting them at different scales. Case F also considered the potential synergies of the social challenge with other phenomena, such as digitalization, to ensure longer impacts.

4.3.2 | Vision and motivations for SI

The analysed SSSs focused their vision on wider social outcomes to sustain their innovation. A common idea is that SI should start from a change in the concept of organization, including the way it operates and conceives the surrounding environment. Beyond personal values and attitudes towards social needs, the interviewed SSSs showed a clear awareness of the need to rethink the current nature of business and its role in innovating the societal status quo. Indeed, the SSSs underlined the need to overcome the dominant culture of ‘only for-profit’ and understand the innovation with the double function of *business and community value*. Case B highlighted a new way of conceiving the role of for-profit as ‘solving a social problem with business logic’, pursuing the growth of both personal and community values. For Case C, SI is an embedded concept that describes ‘how a company is made for distribution—and not absorption—of value’. SI is aimed to detect the specific needs that will reach different social categories, thus resulting in improved well-being for target users and overall society (Case A), even for institutions that are not directly involved (Case F). This requires a shift in the company culture from *measuring impact* to *embedding* the innovation. An interviewee of Case B explained the requirement to ‘rethink the company at the root, which aspires to distribute value, as innovation is not what the company does, but how the company is made’. Conversely, Case A argued that often companies and public institutions hinder an effective measurement of performance with different parameters. Case C experimented with the difficulty in measuring innovation performance compared with the monetary outcomes achieved by other organizations. An interviewee from Case F underlined the need to measure the actual embeddedness in terms of enhanced creativity, use and overall educational level through, for example, collecting feedbacks from users.

4.3.3 | Stakeholders engagement

Several stakeholders should be engaged in the phase of SI development. Case C highlighted the importance of leveraging the ‘awareness of citizens towards the social issue to *promote SI paths*’, as they are the target users who will integrate SI in their daily activities. In this sense, Case E stressed the *educational role of universities* and thus the contribution in spreading awareness and knowledge of the SI benefits within the local community.

After the prototyping stage, technical development is performed to increase visibility and reach target groups, as in Case F. Thus, SSSs opted for established partnerships with companies and, in general, *collaborations with industrial partners* showing a greater propensity for innovation. To further sustain the development of SI, interconnections with the *local institutions favouring entrepreneurship* should be lasting and sensible, as in Cases B and C.

In the sustaining phase, the government and public institutions start having major roles. They are called on to ‘build the context’ and thus to define structural investments and long-term patterns for SSSs and public welfare, as highlighted by Cases A and C. In addition, Cases

B and F interviewees solicited specific measures to enable faster establishment of innovative start-ups with a social mission. These should structure timing and methods to *properly formalize SI and overcome existing barriers* that are hindering the establishment of start-ups. For example, Case F suggested that governments should hire more people that have expertise or are interested into monitoring social trends and community needs.

4.3.4 | Tools adoption

In the attempt to develop and sustain the SI, all SSSs leveraged digital technologies suitable for multiple purposes. In this stage, the development of (or subscription to) an *e-commerce platform* enabled the product to be sold and a wider community to be reached to promote the SI (as in Case E). Case C argued that such tools are pivotal for exchange of knowledge among target groups and possible assessment of SI performance in terms of transactions. Due to the high technological content of the SI, some SSSs augmented the features of flexibility and user *autonomy* with suitable *easy-to-use technologies*, for example, a smart watch (Case A), an optical detector (Case D) and smart toys with educational aims (Case F). Aiming to reach different target groups, Cases A and D also integrated *supporting services and training* modules to foster learning, awareness and reflection on the implications of the SI.

In regard to financial tools, Case A claimed that the majority of SSSs know the *targeted funds to sustain innovative start-ups*, such as support from local institutions (also mentioned by Case C). Case E pointed out the need to simplify the application procedure as SSSs experience difficulty in demonstrating the impact of their SIs.

4.4 | SI scalability

4.4.1 | Challenges

Long-term scalability of SI should consider operational challenges. In particular, SSSs need to *establish alliances* to avoid failure. For example, Case D experienced the potential pitfalls to introducing an SI in the healthcare sector, as ‘companies from my same sector avoid collaboration as they are mainly linked to the prevalent, old economic paradigms and often impede entry into established networks of alliances’. Despite this, Case D would like to promote the diffusion of SI in contexts not recognized as ‘social’ and addressing categories with fewer difficulties. Case A was willing to ally with companies and public institutions with deeply rooted economic paradigms that often hinder involvement of stakeholders in SI. Case F highlighted the need for integration with public institutions to remove obstacles for SI development and to ‘break the current rules’. Moreover, making *understand the wider impact of SI by measurement* is even more critical in this phase. Case A claimed that the measurement of SI performance is hindered by the deeply rooted economic paradigms, leading to a need to identify

measurement parameters that are different. Case E suggested to consider and share the indirect benefits of the SI. Cases F, B and C adopted mechanisms to collect feedbacks from users (e.g., through questionnaires on achieved improvements). Conversely, Case D experienced barriers in entering existing business networks due to a lack of communication and comprehension of SI and due to innovation resistance in traditional sectors (e.g., healthcare).

4.4.2 | Vision and motivations for SI

In the long term, all start-ups have a clear vision of SI as a systemic solution that can optimize the different weaknesses of today's society (as cited by Case A). SI is argued to ensure 'a gain for all involved parties' (Case C), 'a potential propagation to actors that are not directly targeted' (Case F) and a 'complete pervasiveness and maximization of utility at different scales and through improved communication and comprehension of SI' (Case D). This requires a vision of innovation as a *systemic win-win solution* for the company and the stakeholders, included the ones not directly benefiting from the SI. Case F underlined the need to increase community awareness as end users 'do not normally call it SI'.

Motivations for pursuing the scalability of SI should be fostered by *experience and knowledge sharing*. Case D pointed out the role of emotional elements and the dedication to overcome resistance and ambiguity from the stakeholders that show opportunistic aims. A proper knowledge sharing can be achieved by making SI 'fashionable', as stated by Case C. Case E systematically uses education and product/territory knowledge to give value to and spread knowledge on the positive outcomes of the existing local patrimony and the general societal benefits.

4.4.3 | Stakeholders engagement

In this stage, linkages with other innovation actors should be aimed at systemic change that cannot be achieved independently (as cited by Case E). Citizens and the wider community represent an important source of knowledge to detect discomforts and disadvantages of other social categories. They can recognize *indirect and wider outcomes* and, therefore, provide opportunities for expanding business activities, as in Case F. An interviewee of Case C argued that public institutions can have an *intermediary role with the community to promote the innovation*, 'to gain reputation and accreditation, to build consensus and to spread SI'. Case D is building synergies with companies in other sectors (e.g., IT) in order to scale the SI through interesting, concrete and sustainable projects. Case A aims to consolidate *alliances with companies integrating SI in their vision* to increase visibility and reach wider target groups. Finally, Case C favoured collaborations with public associations, co-operatives and other not-for-profit organizations to enhance *co-creation* so to scale the innovation.

4.4.4 | Tools adoption

Interviewees identified several tools useful to enhance SI scalability in a long-term perspective. Case F is developing a *database collecting best practices* to be shared with citizens and public institutions delivering educational programmes. To improve communication beyond target users, Case B mentioned *participation and organization of events* for dissemination to *sell and promote the SI* and to find further opportunities for collaborative projects. Finally, Case D highlighted a *financial supporting structure with a long-term perspective* from government, local institutions and other R&D partners as fundamental for scalability.

5 | DISCUSSION

5.1 | Main challenges of SSs along the SI development process

This section answers to RQ1, based on the case study analysis. The main challenges faced by SSs during the SI development process are discussed for each of the previously identified stages.

5.1.1 | Development of a social need into a potentially scalable idea/innovation

In the first stage of the SI development process, the formulation of a potentially scalable idea or innovation that is able to satisfy a social need can be hindered by the innovation environment that should support its development. The lack of awareness and flexibility could cause a failure of the SS and also the SI in its initial development. Moved by a strong motivation towards SI implementation, SSs require fast and flexible processes to invest in an innovation that often does not allow economic returns in the short term.

Moreover, the development of SI starts from a need that has already been identified by the start-ups. In this case, a lack of experience and expertise (e.g., in technological and business issues, communication means or innovation management) could lead to a missing impact while trying to address the identified need with a scalable solution. Based on the above reasoning, we advance the following propositions:

- P1a. In the stage of development of a social need into a potentially scalable idea or innovation, the lack of fast and flexible processes to create social ventures increases the likelihood of failure of the SS.
- P1b. In the stage of development of a social need into a potentially scalable idea or innovation, the lack of experience of the founding team increases the likelihood of failure of the SS.

This is in line with the social management literature. Indeed, expertise and specialization of skills and roles can favour the revealing of unmet social needs, learning the intricacies of the social business

and fostering financial support more rapidly (Abatecola & Uli, 2016; Battistella et al., 2017; Peña, 2002).

5.1.2 | Test and validation of SI

Start-ups need to clearly communicate the value beyond SI and the gains of the different stakeholders, while testing and validating the newly created product and not resulting in a failure. At the same time, they need to effectively manage the innovation process with the allocation of resources provided by external sources. We can argue that:

P2a. In the test and validation stage of SI, the missing recognition of SI benefits increases the likelihood of failure of the SS.

P2b. In the test and validation stage of SI, the lack of team awareness of resources allocation increases the likelihood of failure of the SS.

This is in line with the start-up literature that suggests that start-ups with social aims demonstrate a minor concern for financial risk and degree of innovativeness and must adopt extra business rigour to organize resources and develop a durable innovation (Battistella et al., 2017; Bocken, 2015; Hoogendoorn et al., 2017).

5.1.3 | SI development and sustainment

Once the SI validity and feasibility have been confirmed, an SS aims to effectively develop and sustain the innovation for further scalability. The SSs could encounter higher likelihood of failure than other start-ups as the main outcomes of SI are intangible, that is, not easily observable or measurable. They need to put extra effort into enhancing awareness of the necessity and relevance of the developed SI while ensuring its economic sustainability.

Based on the above reasoning, we advance the following propositions:

P3a. In the stage of SI development and sustainment, the inability to embed the SI in society and to communicate its intangible outcomes increases the likelihood of failure of the SS.

P3b. In the stage of SI development and sustainment, the difficulty in ensuring the economic sustainability of the innovation and the SS itself increases the likelihood of failure of the SS.

This is line with Sharir and Lerner (2006) who argue that the development of an innovation with social aims can be threatened by a common view of SI in the public discourse as 'in addition' to the present offerings of products and services.

5.1.4 | SI scalability

Reaching the potential scalability of an SI requires understanding the patterns for its long-term replication and spread (Mulgan, 2006;

Murray et al., 2010). The interviewed SSs outline two main challenges in reaching a scope for innovation that goes beyond the SI target users, functionalities and market dynamics. Firstly, the likelihood of failure could be increased by the lack of awareness of possible wider impacts, for example, in social contexts that do not explicitly show related difficulties. Secondly, expansion of the SS is threatened by deeply rooted economic paradigms (i.e., strictly focusing on economic profits) and the barriers of entry into already established alliances in the sectors they operate. Therefore, we posit that:

P4a. In the stage of SI scalability, a weak understanding of the developed SI's wider impacts (beyond its target users and functionalities) increases the likelihood of failure of the SS.

P4b. In the stage of SI scalability, the inability to overcome the barriers emerging from deeply rooted economic paradigms and existing alliances increases the likelihood of failure of the SS.

Indeed, although regular start-ups mainly face location- or industry-specific advantages (Peña, 2002), SSs need to leverage networking and maintaining relationships with stakeholders (Hoogendoorn et al., 2017) to properly diffuse the innovation into society and therefore break routines and path dependencies into existing structures (Martinez et al., 2017).

5.2 | Mechanisms to develop innovation process and avoid failure of SS

This section answers to RQ2, based on the analysis of the case studies. It emerges that the mechanisms employed by SS to avoid failure of a developed SI relate to the definition of vision and motivations, the engagement of stakeholders and the adoption of tools. Each of these issues can be properly characterized and integrated by the SS in order to face the challenges identified in each SI development stage.

5.2.1 | Definition of vision and motivations for SI

Along the process of SI development, SSs define their vision of SI as a systemic solution carrying benefits for the single firm and overall society. They are called to balance different (and often opposite) tensions arising in the innovation process or among agents taking part to it. These tensions include the kind of innovation to be developed (incremental or radical), the economic issues (the accomplishment of benefits for the overall community and the economic sustainability of the innovation) and the cultural issues (the potential misalignment between the social mission and the need to share knowledge with all stakeholders). To avoid a possible resulting failure, a change of mindset requires ethical leadership skills (as confirmed for social management by Pasricha & Rao, 2018) and a corporate culture dedicated to properly sharing knowledge with all stakeholders, even if their interests could be not aligned with the social mission. Indeed, SSs are motivated by the learning enhanced by both the experience

throughout the SI development process and the establishment of knowledge base extended to other social needs or stakeholders (Abatecola & Uli, 2016).

Based on the above reasoning, we advance the following proposition:

P5. In the definition of vision and motivations, balancing tensions among radical, economic and cultural aspects of SI decreases the likelihood of failure of the developed SI.

5.2.2 | Stakeholder engagement

As highlighted in the literature, the creation or identification of networks and credible partnerships with multiple stakeholders is fundamental to the development of new social ventures (Bocken, 2015; Murray et al., 2010). Case study results show that SSSs involve the targeted beneficiaries and the other interested parties in different phases of the SI development process. Stakeholders can have different roles to increase the opportunities to realize their vision, ensure a wider SI impact and overcome the challenges driving a possible failure. Specifically, citizens (and the overall community) should be actively involved from the first phases of SI development. They represent a key source of knowledge in recognizing unmet needs and indirect outcomes and are able to provide feedback on the SI from the user perspective. Focusing on R&D partners, the collaborations with universities, research centres and other companies are mainly defined in the test and validation phase. Partnerships with other companies are then consolidated towards alliances in favour of a systemic view of SI. Public and non-profit sectors are mainly involved in the long term, with the aim of extending the SI to new uses or needs. Supporting organizations, such as venture capitalists, should be engaged from the testing phase in order to clearly (and practically) validate the benefits of the SI, thus avoiding a possible failure.

Interviewed SSSs highlighted the importance of constantly engaging public institutions, especially local governments, from the development and sustainability phase of the SI process. Public institutions can play a key role in building a context that facilitates faster and more flexible processes and measures for overcoming existing challenges and promoting the developed SI, such as a regulatory framework for public sector intervention, as mentioned by Arena et al. (2018).

Based on the above reasoning, we advance the following proposition:

P6. The engagement of community (or citizens), R&D partners and public institutions in different and sequential phases of the SI development process decreases the likelihood of failure of the developed SI.

5.2.3 | Tools adoption

The adoption of specific tools allows SI development activities to be carried out quickly and effectively (Maiolini et al., 2016). Based on the

case study analysis, we can argue that all phases of SI development are supported by the use of technological, financial and communication tools, which are integrated throughout the process to avoid a potential failure. The tools adopted have a key role in generating a positive and relevant social impact of the SI and are characterized by low financial investments and ease of use for target users.

The technological tools include up-to-date, easily accessible and multipurpose technologies. These can be integrated into the innovation itself, especially during the prototyping and development phases, to facilitate flexibility and autonomy for the end users. Technologies such as online platforms can also facilitate the emergence of innovative ideas in the first phase of ideation or sustain the innovation and the business by reaching a wider community in the long term.

The search for financial resources is generally a liability of start-ups due to their newness (Bennett, 2016; Criscuolo et al., 2012). To avoid a possible failure, SSSs must detect and access funding schemes and investment formats that are in line with the nature of SI. Financial tools should consider the difficulty in measuring the returns on investment and be targeted to the different needs of SSSs according to their development stage. In this sense, SSSs need to identify funding schemes available at regional, national and European levels that are specifically addressed at supporting new ideas with social aims. Aiming to further concretize their social mission, more long-term solutions should be fostered in collaboration with public institutions.

The efficacy of financial tools can be further enhanced if integrated with communication tools. These provide the means to disseminate the benefits of the developed SI and to train users in maximizing SI utilization and application opportunities. Other tools include online platforms such as social networks, to be leveraged especially in the ideation phase to reach the wider community. Several SSSs gained insights in the organization of and participation in focused contests, especially in the testing phase, or events with potential R&D partners and investors, to enhance further scalability of the developed SI.

Based on the above reasoning, we advance the following proposition:

P7. Adopting a mix of technological, financial and communication tools that is suitable for the phase of SI development process, the type of SI developed and the stakeholders involved in each phase decreases the likelihood of failure of the developed SI.

6 | CONCLUSION

This study explored the process of SI development in the context of SSSs. It reviews extant literature on SI development process and the specific environment of start-ups (i.e., SSSs) to identify contextual issues.

6.1 | Theoretical contributions

A first contribution of the study is the building of a four-stage SI development process for SSSs that integrates key references from SI

and start-ups literatures. Multiple case studies in six Italian innovative start-ups with a social focus revealed a pattern of challenges encountered during the process. Moreover, results identify a series of mechanisms activated throughout the four phases that can help SSs avoid failure, that is, becoming 'falling stars'.

Results from empirical analysis contribute to the research on SI by exploring the efforts carried out by SSs, which are recognized as key agents contributing to the sustainable development of innovation but still understudied (Piccarozzi, 2017). This study shows that challenges faced by SSs can be characterized according to the stage of the SI development and growth process. In this sense, the resulting framework addresses the need to highlighting the SI process from the perspective of implementation as well as outcome for sustainable development and social change (Cajaiba-Santana, 2014; Edwards-Schachter & Wallace, 2017). Firstly, SSs' failure can be caused by the lack of expertise in social problems and of flexible processes for social ventures creation; secondly, by the lack of awareness of SI benefits and proper resources allocation; and, finally, by a weak understanding of the impact and intangible outcomes of the developed SI in society, while ensuring its economic sustainability in front of deeply rooted economic paradigms. Successfully overcoming these challenges requires SSs to put in place mechanisms of (1) leveraging a vision and motivations that balance tensions between types of innovation, economic and cultural issues, (2) engaging the SI stakeholders in different (and sequential) phases of the SI development process and (3) identifying and adopting the most suitable technological, financial and communication tools in an integrated way.

6.2 | Practical contributions

This study also points to several practical implications. It offers useful knowledge for a multiplicity of actors involved in the SI development process, including social entrepreneurs, innovation managers and other stakeholders, such as policymakers and venture capitalists, interested in the development of innovative products, services or processes aimed at meeting social needs.

Social entrepreneurs can benefit from results of study synthesized in the final propositions for increasing the success probability of their innovation and their business. For instance, we found that actions like the effective communication of SI intangible outcomes, the active engagement of community (or citizens), R&D partners and public institutions and the adoption of mix of technological, financial and communication tools reduce the likelihood of failure of an SS. The framework proposed (Figure 2) unveils multiple issues involved in SI development process for both entrepreneurs and innovation managers willing to boost their SI in light of their growth steps and innovation environment. It can act as a guideline to be adapted and integrated in a specific competitive market and in a specific organizational context for an effective management of SI development stages. The context of SSs present insights also for companies aiming to carry SI, especially in uncertain and complex contexts. Results raise the awareness on leveraging on different sets of mechanisms, that is,

definition of vision and motivations, stakeholder engagement and tools adoption, to be considered according to decisions solicited in both innovation and business development.

The challenges encountered and mechanisms activated by SSs can be informative for stakeholders that should support SI contextual development, as venture capitalists and policymakers, in setting investment options and managing social initiatives more effectively. Building on a process perspective, these actors can effectively support SSs into (1) a widespread awareness on the relevance of SI development patterns and societal impact through an aligned vision, (2) the identification of suitable practices to be carried out in different start-up stages and (3) the access to stakeholders to involve and tools to adopt in order to increase social value and scale the SI. This is especially important given that the potential failure of an SI is linked to the actions of all stakeholders in embedding SI in society and contingent to the SI development stage. Local institutions and policymakers can leverage results to understand the decisional points where to evaluate, improve and integrate existing initiatives to support SSs. These actors have shown to have a pivotal role in enhancing the growth of SSs at the convergence of social value, sustainable development and economic return.

6.3 | Limitations and further research

Major limitations of the study concern the research design, that is, the limited generalizability of the multiple case study, and the qualitative data analyses. The selected start-ups demonstrate variation in business, industry, scope and type of SI, but studies involving more companies can further develop and validate the resulting framework. Future research could include cases of successes and failures (Maase & Bossink, 2010) and discuss the implications in terms of involving specific types of stakeholders (e.g., institutions or individuals) or developing specific tools for enhancing SI performance. Further, future studies could test the developed propositions through a large-scale survey, so to achieve a higher generalizability of results and test for differences among groups of SS with different characteristics.

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APPENDIX A.

TABLE A1 SI development process in the selected start-ups

Cases	Development of a social need into a potentially scalable idea/innovation	Test and validation of social innovation	Social innovation development and sustainment	Social innovation revision for scalability
<i>Start-up A</i>	<ul style="list-style-type: none"> ■ SI 'creates and shapes new economies based on the centrality of the individual and its needs (and not on products)' [V] ■ Citizens provide detailed information on their needs [S] 	<ul style="list-style-type: none"> ■ Making understandable the wider impact of SI to stakeholders [C] ■ Citizens as final users provide timely feedbacks [S] ■ Web application for autonomy [T] ■ Public contests for SI testing [T] 	<ul style="list-style-type: none"> ■ SI viewed as something 'to bring in addition to' and not embedded in society [C] ■ Companies and public institutions hinder measurement of SI performance [C] ■ SI 'aimed to reach different social categories, improving well-being for target users but also overall society' [V] ■ Government role: 'building the context' to promote and support efforts and investments for SI [S] ■ Regional funds for innovative start-ups with social mission [T] ■ Integration of services [T] 	<ul style="list-style-type: none"> ■ Companies and public institutions with deeply rooted economic paradigms hinder involvement of stakeholders in SI [C] ■ View of SI in the long term as 'an enabler for optimizing in a synergic way the different weaknesses of nowadays society' [V] ■ Dissemination with companies that integrate SI in their vision [S] ■ Alliances and synergies with companies in other sectors (e.g., IT) [S]
<i>Start-up B</i>	<ul style="list-style-type: none"> ■ Overcoming lack of experience of the entrepreneurial team [C] ■ Faster processes and flexibility for creation of new ventures targeting SI [V] ■ Target users for detecting social discomforts and disadvantages [S] ■ Social bonds and similar economic measures [T] ■ Communication means (e.g., television) to identify unmet social problems [T] 	<ul style="list-style-type: none"> ■ Willingness to solve a social need with 'business logics' and integration of technology [V] ■ Need to change the mindset: initial high expenditures but lower costs in the future [V] ■ Continuous knowledge sharing with target users for feedbacks [S] ■ Support by venture capitalist [S] ■ Web application based on artificial intelligence [T] ■ Short-term pilot projects with other start-ups [T] ■ Seed investment [T] 	<ul style="list-style-type: none"> ■ Considering the economic sustainability of SI: main outcomes are intangible [C] ■ Overcoming the common view of SI as something 'in addition' [C] ■ Passion and dedication to increasing both personal and community values [V] ■ Government definition of measures to support start-ups' establishment [S] 	<ul style="list-style-type: none"> ■ Events for dissemination and opportunities for collaborative projects [T]
<i>Start-up C</i>	<ul style="list-style-type: none"> ■ Considering different ways of doing SI, that is, radical or incremental innovation [V] ■ Experience of the team in the for-profit sector helped sustaining SI as a radical innovation [V] 	<ul style="list-style-type: none"> ■ Consciousness and awareness of 'what stands behind' innovation, for example, resources allocation [C] ■ Align languages of non-profit, business and citizens [V] ■ European funding scheme [T] ■ Pilot projects sustained by local institutions [T] 	<ul style="list-style-type: none"> ■ Need to sustain the social enterprise beyond donations [C] ■ Difficulty in measuring SI performance [C] ■ 'SI as an embedded concept that describes what and how a company is made of, that is made for value distribution and not absorption' [V] ■ Sustainable, inclusive and value-generating capitalism, where SI is something 'due to' [V] ■ Citizens' awareness of SI [S] ■ Territory and local institutions facilitating entrepreneurship [S] 	<ul style="list-style-type: none"> ■ New venture to develop SI as a systemic win-win solution, 'where all involved parties gain something, both in terms of business and knowledge acquisition' [V] ■ Public institutions act as intermediary [S] ■ Co-creation with third-sector organizations [S]

(Continues)

TABLE A1 (Continued)

Cases	Development of a social need into a potentially scalable idea/innovation	Test and validation of social innovation	Social innovation development and sustainment	Social innovation revision for scalability
<i>Start-up D</i>	<ul style="list-style-type: none"> ■ Needed experience before implementing SI for right vision and smart management [C] ■ ‘Focusing the business model on specific sectors, but thinking of a product/service with multiple purposes’ [V] ■ Communication channels, for example, crowdsourcing platforms [T] 	<ul style="list-style-type: none"> ■ Willingness to integrate the technological aspects to develop SI for different needs [V] ■ Consider expected outcomes in terms of savings, speed and width of SI adoption [V] ■ Partnerships with industrial partners with high technological content [S] ■ R&D projects with research centres, hospitals and universities [S] ■ European funding scheme [T] 	<ul style="list-style-type: none"> ■ Government facilitating ‘reduction of private welfare’ in favour of public welfare in a sustainable way [S] ■ E-commerce platform [T] 	<ul style="list-style-type: none"> ■ Barriers due to lack of communication and comprehension of SI [C] ■ Diffusion of SI also in contexts not recognized as ‘social’ and among categories not in difficulty [C] ■ Innovative start-ups as a ‘foundry’ for experiment innovation and ‘share the emotional component to change behaviour and have a widespread impact’ [V] ■ Third sector, for example, co-operatives and associations [S] ■ Financial support with a long-term perspective from government [T]
<i>Start-up E</i>	<ul style="list-style-type: none"> ■ A start-up needs ‘a cultural preparation for SI to properly develop its own business and to spread the innovation’ [C] ■ Incremental approach: ‘Innovation means also using existing tools to communicate new messages’ [V] ■ Application to schemes with simplified procedures for funding innovative start-ups with social aims [T] 	<ul style="list-style-type: none"> ■ Overcome the perception of SI as a threat to existing market share [C] ■ Lack of awareness and knowledge on SI benefits [C] ■ Local community [S] ■ Web-based technologies and innovative software based on man-machine interface [T] 	<ul style="list-style-type: none"> ■ Understanding opportunities of SI exploitation and embeddedness in society [V] ■ Collaboration with institutions overcoming traditional linkages with business context [S] ■ Educational role of universities for SI [S] ■ Web platform for e-commerce [T] 	<ul style="list-style-type: none"> ■ Need to consider and share also the indirect benefits of the SI [C] ■ Systematic attention towards education and knowledge of products and territory [V] ■ Local community [S] ■ Institutions (e.g., ministries and chambers of commerce) as intermediaries [S] ■ Events and seminars on SI for education, knowledge diffusion and integration in society [T]
<i>Start-up F</i>	<ul style="list-style-type: none"> ■ Need of a culture ‘addressing both digitalization and social impact, enhanced by formal structures’ [V] ■ Target users and community [S] ■ Online platforms [T] 	<ul style="list-style-type: none"> ■ Missing awareness on what SI is [C] ■ Integration of technological aspects in the development of an innovation that is mostly socially oriented [V] ■ Development of prototype modules [T] 	<ul style="list-style-type: none"> ■ Missing parameters to evaluate SI benefits [C] ■ SI as ‘an opportunity for the local community, even for institutions not directly involved’ [V] ■ Need to measure outcomes in terms of creativity and use of the innovation and also the overall educational level [V] ■ Local community [S] ■ Partnerships with companies [S] ■ Public institutions structure timings and methods to formalize SI [S] 	<ul style="list-style-type: none"> ■ Need to ‘break the existing schemes’ and coordination with public institutions [C] ■ Need to increase community awareness of SI because final users ‘do not call it SI’ [V] ■ Dialogue between community and institutions [S] ■ Database of best practices to replicate SI [T]

Abbreviations: [C], challenges; [S], stakeholders; [T], tools; [V], vision and motivations; R&D, research and development; SI, social innovation.