Determinants of innovative social entrepreneurship: a case study of a Mexican social organization

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Received: 8 April 2018 Revised version: 27 May 2019 Accepted: 07 June 2019.

ABSTRACT

Innovative social entrepreneurship (ISE) is a topic of recent interest in research. The knowledge of the determinants of ISE and the characteristics of the innovations created by them is still limited. Therefore, the present document aims to contribute to this knowledge; specifically, it explores the determinants of the innovative behavior of ISE, during its process of creation and growth, and discusses the nature of such innovations (type, novelty, scope and impact) created throughout that process. Based on a case study of a paradigmatic Mexican social organization, we argue that these determinants are divided into: *internal* (characteristics of the individual entrepreneur and model/strategy of the organization); and *external* (context/environment). These determinants are causally associated with different stages of the abovementioned process and with certain attributes of the innovations developed. In addition, it is suggested that ISE innovation has a strong intangible and non-technological component, mainly in business model innovations, but also in its operating model (based on social inclusion).

Keywords | Social entrepreneurship; Innovation; Internal/External Determinants; Isla Urbana; Mexico

1. Introduction

Social Entrepreneurship (SE) is an emerging phenomenon, increasingly popular in the literature and political discourse, as well as in new business practices around the world (ALEGRE; KISLENKO; BERBEGAL, 2017). These practices are guided by a mission to respond to social problems by addressing the unmet needs of vulnerable populations (DEES, 1998; NICHOLLS, 2006). An entrepreneurial initiative based on (social) innovation processes is called innovative social entrepreneurship (ISE).

Research has advanced considerably in exploring the characteristics and motivations of the individual entrepreneur (BOLUK; MOTTIAR, 2013; DEES, 1998; ZAHRA *et al.*, 2009), as well as of social enterprises and the main actors of the SE ecosystem (PEREDO; MCLEAN, 2006; WEERAWARDENA; MORT, 2006; TANDON, 2014). However, just a few works provide detailed explanations from a global perspective that contemplates the relation between the individual, organizational and contextual levels, e.g., Popoviciu and Popoviciu (2011) and Puumalainen et al. (2015). The literature begins to get interest in the analysis of innovations created by these ventures and, also, of their involvement in the ISE phenomenon (ALVORD; BROWN; LETTS, 2004; TANDON, 2014; AUVINET; LLORET, 2015).

One of the most accepted consensuses is that innovation is a fundamental tool for the success of social organizations or enterprises. According to Dees (1998) and Alvord Brown and Letts (2004), innovation is necessary to achieve solutions in unprofitable contexts, through which the resources and capacities of the population served are mobilized, empowerment is promoted (MAIR; MARTÍ, 2006), and the quality of life of the population is improved.

Based on the advances in the knowledge on ISE, this paper explores and analyzes the determinants of the innovative behavior of ISE, during its process of creation and growth, and discusses the nature of the innovations (type, novelty, scope and impact) created throughout that process. The determinants and characteristics of the innovations are recognized due to the identification of the social need to create and implement innovative solutions. This document follows a holistic approach over three analytical levels: individual, organizational and contextual.

The research design is based on an in-depth case study (YIN, 2003). The case is of a paradigmatic, and one of the most internationally renowned, Mexican innovative social organization: Isla Urbana. Additionally, this design is complemented with some tools coming from the structural-causal analysis for qualitative non-experimental research (PEARL, 2009).

This paper suggests that the innovations created by ISE are not only technological and tangible innovations, related to the growth of organizational productivity – as observed in traditional entrepreneurial ventures –, but also non-technological and intangible, associated with business models and a high participation of the population attended (ALVORD; BROWN; LETTS, 2004; ALEGRE; KISLENKO; BERBEGAL, 2017).

Having this knowledge about the main determinants underlying a phenomenon such as ISE has important implications for the strategic orientation of public policy, as well as for management and lobbying of social organizations/enterprises. In addition, understanding the nature of innovations for social purposes can be useful for creating business and policy mechanisms that promote these types of innovations – beyond an ambiguous "social impact".

This document is divided into six sections. After this introduction, section 2 outlines a framework on ISE, its determinants and the main characteristics of its innovations. Section 3 describes the research method used for said purpose. Section 4 presents the case of Isla Urbana and analyzes the stages of its creation and growth process. Section 5 discusses the determinants underlying the ISE process and the nature of its innovations. Section 6 contains the final reflections and conclusion.

2. A reference framework: innovation-based social entrepreneurship

Innovation-based social entrepreneurship is a topic of interest in the emerging research on entrepreneurship and innovation. The concept of SE refers to the process whereby social value is created, using novel business practices to respond to a social problem/need which neither the market nor the government have been able to solve (DEES, 1998; MAIR; MARTÍ, 2006; MARTIN; OSBERG, 2007).

This process comprises several activities undertaken to transform ideas into context-specific and, usually, environmentally-friendly solutions, and achieve social transformations (WEERAWARDENA; MORT, 2006; AUSTIN; STEVENSON; WEI-SKILLERN, 2006). The generation of income, as well as the creation of both incremental and radical innovations, are key elements in the success of SE (ALVORD; BROWN; LETTS, 2004; TANDON, 2014; AUVINET; LLORET, 2015), especially in those with hybrid business models – such as Isla Urbana. Thus, when innovation is included, the concept evolves towards innovative social entrepreneurship.

2.1 The role of innovation in SE

One of the most accepted consensuses is that innovation is a fundamental element of SE to effectively solve a social problem/need in unprofitable contexts (SEELOS; MAIR, 2005). Regarding the role of innovation in these ventures, we can identify two approaches: innovation as a *result of entrepreneurial activity*, which may (or not) occur during the SE process (LEADBEATER, 1997; ABU-SAIFAN, 2012); and innovation as an intrinsic characteristic and a necessary condition to create social value and a sustainable transformation (DEES, 1998; ALVORD; BROWN; LETTS, 2004; PEREDO; MCLEAN, 2006; AUSTIN; STEVENSON; WEI-SKILLERN, 2006; MAIR; MARTÍ, 2006).

This paper is positioned in the discussion of the second body of literature. However, both the characteristics of the innovations created by ISE and their nature have hardly been the focus of investigations in this literature (ALVORD; BROWN; LETTS, 2004), to which the concept of innovation is based on the economic-Schumpeterian approach, as "a new way of doing things" (DEES, 1998; WEERAWARDENA; MORT, 2006; ABU-SAIFAN, 2012; TANDON, 2014). Nevertheless, Schumpeterian innovation is linked to ventures, entrepreneurs or enterprises which aim to satisfy market needs (Mark 1 approach) and their main objective is to obtain economic profits and increasing competitiveness (SCHUMPETER, 1911). Furthermore, innovation is an invention accepted by the market, resulting from large investments in research and development (R&D) (Mark 2 approach) (FAGERBERG, 2009).

Recent works discuss this previous position, providing important empirical evidence on the specific characteristics of innovation in SE (DEES, 1998; ALVORD; BROWN; LETTS, 2004; AUVINET; LLORET, 2015; PUUMALAINEN *et al.*, 2015). Based on a review of numerous cases, Alvord, Brown and Letts (2004, p. 270) show that "successful SE uses innovations that mobilize the assets of marginalized groups to improve their lives, rather than just delivering external resources and services".

Moreover, these authors propose and describe three "forms of innovation", according to the purpose of the entrepreneurship, the business model and intensity of the participation of the attended population:

- build local capacity (e.g., education programs in poor localities);
- share innovation packages (e.g., create and test a microcredit package);

• build social movement (e.g., organize local unions for the defense of civil rights groups in excluded/discriminated communities).

Even with the importance of that pioneering paper, there is a conceptual confusion between "forms of innovation" and "forms of entrepreneurship". These terms are used indistinctly throughout that document, so it is not clear neither what is an SE nor what is the innovation created. This type of confusion can be appreciated in much of the literature. Therefore, it is possible to argue that knowledge about the determinants of the innovative behavior on those ventures, as well as the nature of its innovation, is still limited.

This paper aims to contribute to the knowledge on the nature of innovation in the context of a successful case of ISE in Mexico, as well as on its determinants. Following Schulz (2008) and Lall (1992), at least four dimensions define the nature of innovation: *type of innovation* (product/service, process, organization, commercialization and, additionally, business model); *novelty* (for what context or at what scale a development is considered new); *structure of sources or costs* (for its development or dissemination); and *results/impact*.

Henceforth, in this document, ISE is defined as a set of business and non-profit activities aimed at solving a social problem/need of vulnerable communities through innovative solutions, the results of which add social value and can be sustained over time. These solutions consist of new combinations of resources (human, material, natural, etc.), first created by an individual and then implemented by a social organization or enterprise in a specific context or ecosystem/environment.

2.2 Determinants of ISE from different analytical perspectives

Creation and growth in the ISE process have been analyzed from three perspectives. The first one focuses on the individual attributes of the social entrepreneur (DEES, 1998; ELKINGTON; HARTIGAN, 2008; ZAHRA *et al.*, 2009; BOLUK; MOTTIAR, 2013; OMOREDE, 2014; PUUMALAINEN *et al.*, 2015); the second centers on the study of the organization as the entrepreneurial unit (THOMPSON; DOHERTY, 2006; EUROPEAN COMMISSION, 2014; BROUARD; LARIVET, 2011; TANDON, 2014), and the third one uses a broader view to cover the ecosystem (WEERAWARDENA; MORT, 2006; AUSTIN; STEVENSON; WEI-SKILLERN, 2006; POPOVICIU; POPOVICIU, 2011; PUUMALAINEN *et al.* 2015). These studies have made significant contributions on this subject, concerning to:

 $^{1\}quad A vailable\ at\ http://ec.europa.eu/internal_market/publications/docs/sbi-brochure/sbi-brochure-web_es.pdf.$

- motivations of the social entrepreneur, such as personal experience and skills from studies or working life (BOLUK; MOTTIAR, 2013);
- business model of social organizations/enterprises. The literature accepts that SE breaks with the schemes of traditional business models. In particular, Mair and Martí (2006) propose three models: non-profit (social enterprises that do not generate economic profits or that reinvest the total income in altruistic activities); for-profit (ventures guided by a social mission, where the profit purpose at least equals the importance of the social purpose); and hybrid (which combines the previous models, and is characterized by the diversification of income);
- relevant actors (sources) in the financing and promotion of SE, such as non-governmental organizations (NGOs), local governments and companies, whose support can be economic (grants, subsidies, prizes) or non-economic (visibility/dissemination, access to exclusive calls, collaborations to implement their solution in certain communities, etc.) (see PUUMALAINEN *et al.*, 2015).

These contributions set the bases for three analytical levels of the same phenomenon: individual, organizational and contextual. Specialized literature has addressed these three levels of analysis of ISE independently from each other. Nevertheless, they can be seen as part of an analytical space that goes from micro (entrepreneur) to macro (context) levels. Therefore, in this space, we can identify the determinants of the innovative behavior of a social organization, as well as the results, scope and impact of its innovations, through the exploration and analysis of each stage of that process.

Based on these contributions, figure 1 outlines a conceptual framework of the creation and growth process of ISE, which is shown as a process with different stages. It is worth mentioning that despite being displayed in a linear way, it is a dynamic process with continuous feedback between the stages. In the first stage, there is the definition of the social problem. The (social) entrepreneur identifies one or more unsatisfied needs that constitute a social problem and require a change in the way of doing things. According to Guclu, Dees and Anderson (2002), both personal experience – with the problem attended –, and personal characteristics of the individual (social responsibility, studies, etc.) are factors that determine how well an individual defines a problem and proposes a solution. This happens through a continuous process of creativity and research.

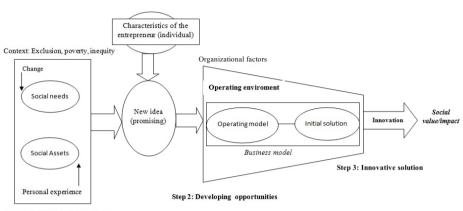


FIGURE 1
Conceptual framework of the ISE process

Step 1: Definition of the problem

Source: Own elaboration, based on Guclu, Dees and Anderson (2002), Austin, Stevenson and Wei-Skillern (2006), and Popoviciu and Popoviciu (2011).

Subsequently, in a second stage, the entrepreneur develops opportunities, and the idea becomes the proposal of a solution. According to Dees (1998), the dissemination of innovative solutions occurs through different vehicles; in other words, through a social organization that can take various legal forms according to their specific objectives. At this stage, determinants associated with the organization that implements social entrepreneurship come into play. Determinants such as the business model (non-profit, profit and hybrid) and the operating model are crucial for scaling up and setting an effective implementation of innovation during stage 3 (POPOVICIU; POPOVICIU, 2011).

So far, the determinants for achieving the emergence of ISE are a group of endogenous or internal determinants – that is to say, both the individual entrepreneur and the organization –, which arise from the need to disseminate and scale an innovation to create social value. However, the operation of the organization is not isolated; on the contrary, it is inserted into the specific context or ecosystem in which it operates (AUSTIN; STEVENSON; WEI-SKILLERN, 2006).

Hence, exogenous conditions (context) also impose determinants for the success or failure of an ISE endeavor, that is, external determinants associated with the interaction with other actors, such as local governments, international foundations and collaboration networks (GUCLU; DEES; ANDERSON, 2002). These actors

can play a central role as financing sources of an innovative social enterprise, or as a support for the effective dissemination of their innovations. This paper uses the latter framework to analyze the process of creation and growth of a Mexican social enterprise.

3. Research design

3.1 A mixed exploratory methodology

According to Morse (1991), theoretical imprecisions and/or lack of empirical evidence are arguments for carrying out a qualitative research. This paper studies a contemporary social phenomenon, whose theoretical debate is still under consideration; for this reason, we chose a case study method of holistic design (YIN, 2003). In addition, as the present document aims to show evidence regarding the determinants of ISE and the nature of its innovations, the case study is complemented by fundamental ideas coming from causal analysis for qualitative data (PEARL, 2009).

The case is of Isla Urbana, a successful Mexican social organization based on a hybrid business model. This company has both national and international recognition. We chose this case both for its alignment with the theoretical-conceptual approach of this paper and because it presents a highly innovative component in its SE activities (product, business model, organization, etc.). Therefore, it is a revealing case that allows us to contrast its results with the existing literature.

The unit of analysis is the group of determinants of innovative behavior on ISE. The observational unit is a Mexican social enterprise; specifically, the analytical unit (the determinants) is observed during the process of creation and growth of that venture. We used three sources of evidence: open (semi-structured) interviews, document review and direct observation. Twelve interviews were conducted with various collaborators of the organization at different hierarchical levels, including the founder/entrepreneur, management positions (2) and operational/administrative collaborators (3), as well as some beneficiaries (5). The interviews lasted between one and three hours, and some people were interviewed more than once.

We asked the interviewees to describe each stage through the creation and growth process of Isla Urbana, from its conception to its current activities. The interview guide included questions about the distinctive characteristics of the organization/enterprise, the changes perceived over time (technological and non-technological),

as well as critical aspects or trends that caused these changes. In addition, they were asked to give concrete examples of innovations (models, strategies, products, etc.).²

The use of causal analysis made it possible to increase the reliability of the results and findings obtained (PEARL, 2009). To establish relationships of determination (or cause-effect), we identified first the facts/actions that possibly determined the innovative performance of Isla Urbana (and its impact). Subsequently, these facts were aggregated into main determinants (causes), and then we systemized the effects caused by each determinant, as well as the type of associated innovation (see Table 1).

This document follows the rules of causality proposed by Blalock (1964) for the analysis of the empirical evidence. This author states that the minimum rules for establishing causality (i.e., a fact determines a certain situation) are: universality (every effect has its cause), necessity (given the necessary and enough conditions for the effect to effectively occur), univocity (certain causes explain certain effects), and succession in time (the cause always precedes the effect). Thus, starting from chained facts that comply with the rules of causality, and through the extraction of determinants, we were able to systemize and stylize the relationships between those determinants and the observed innovations (see Figure 2 in the next section).

It should be noted that, although a single case study does not allow to get a statistical generalization of the results, the depth and detail of holistic case studies do allow the method to be replicated in other contexts and cases of ISE (YIN, 2003). Likewise, even though the causality relationships presented correspond to a specific reality in a specific time and space, the implementation of the basic rules of causal analysis will enable theoretical contrast and "feed" the construction of new conceptual categories, suggesting certain causal explanations.

3.2 Case Profile

Isla Urbana is a pioneer social organization in implementing —to scale— rainwater-harvesting systems in Mexico. The systems designed and installed by Isla Urbana are conceived for vulnerable communities living in precarious conditions. One of its main attributes is the low cost of these systems, which makes them affordable for many people. The equipment and materials used are simple (usually recycled and/or renewable equipment), but of good quality and high durability. To date, this organization has installed more than 7,400 collection-and-purification water

² We used multiple sources of information, established chains of evidence, and the draft report of the case study was reviewed by key informants (some of them interviewed) to prevent subjectivity by the researcher.

systems, benefiting approximately 51,800 people, and harvesting more than 333 million gallons of rainwater annually.

Currently, Isla Urbana has approximately 30 (full-time) employees. It is an organization with a vertical and highly flexible structure promoting the generation of ideas and feedback by all its employees and collaborators. This organization implements a hybrid business model; thus, it can combine a business activity to supply the market with sustainable rainwater harvesting systems and, simultaneously, to maintain the social aspect of the project (for which it was created). Therefore, harvesting systems have spread through this model to various socio-economic contexts.

Benefited communities belong to marginalized municipalities strongly affected by water shortage and poor quality of water. Isla Urbana has implemented six field projects in indigenous and rural communities (in extreme poverty); with them, the company has benefited over 3,000 dwellings, six rural schools and one shelter. In addition, they have installed their systems in marginalized urban areas in Mexico City, specifically in three healthcare centers (in hard-to-reach areas), four public schools, 500 dwellings and three community water treatment plants, each with more than 180,000 liters of drinking water harvested per year.

It has won several national and international awards.³ Hence, it has great prestige and dissemination, as well as an extensive collaborative network with numerous national and international actors (such as other social entrepreneurs and organizations, NGOs, private companies, etc.). These projects have been funded by local governments – such as the government of Mexico City, through the *Secretaría de Ciencia y Tecnología*, and the federal government, through the *Secretaría de Medio Ambiente y Recursos Naturales* (SEMARNAT) – and supporting companies or organizations, such as IRRI, Ashoka and private banks.

4. Creation and growth process of an ISE venture: stages, characteristics and related facts

This section analytically describes the creation and growth process of Isla Urbana, from the stage of identification of the social problem to the implementation of the solution, and then to its current stage. In each of these stages, the main attention is focused on the key facts/actions that have determined the innovative behavior of

³ Some of them: "Young Entrepreneur" Merit Award (2015), by the Instituto Mexicano de Mejores Prácticas Corporativas; Changemaker Ashoka Fellowship (2012-2015); Momentum Project, by BBVA Bancomer for "Innovation and Scalability in Social Entrepreneurship" (Mexico, 2014); finalist in the 2010 BBC World Challenge, in England; and finalist at the 2011 UN-Water, in Spain.

social organization; likewise, the emphasis is placed on the innovations and results attained by Isla Urbana.

4.1 Defining the problem and creating new ideas (2005-2009)

The 2000s involved a shift on growth and development issues at an international level. The beginning of this decade was marked by the Millennium Summit of the United Nations and by the setting of the Millennium Development Goals to fight poverty, hunger, environmental degradation and illiteracy, among other major social problems.

Within this framework, several disciplines focused on new technologies and new materials emerged, and they were strongly centered on the application of knowledge to solve (socially and sustainably) development problems. In 2005, two young Mexicans were studying Industrial Design at Rhode Island School of Design (USA). In their (joint) thesis, they studied Mexico's low-income self-constructed housing in marginalized areas. In these areas, the population faced problems of water shortage and poor quality of potable water, as well as frequent floods.

Their research led to a new proposal for solving this problem: a system to harvest rainwater in low-income self-constructed housing. In 2009, after concluding their studies, they returned to Mexico with the purpose of implementing their rainwater harvesting idea. That year, they contacted an experienced plumber who was already making very simple rainwater harvesting designs. The three became partners for the project of designing, producing and installing pilot rainwater harvesting systems. This partnership was called Isla Urbana, which installed its first system at a marginalized community in Mexico City within a few weeks.

The harvesting system consisted of some plastic pipes installed on the roofs of houses that were then connected to a *cisterna* (underground water tank) and a *tinaco* (external water tank). The pipes transport the water to the cistern, but there is a previous process of separation of solids through common filtration, since in the first minutes of precipitation the pollution of the air and the ceilings falls with the rain.

Subsequently, when the water stored in the cistern is used, it is pumped into the external water tank and purified with two filters (retention of solids based on deposits and a carbon cartridge that removes any odor, color or taste from the water). Finally, a chlorination process is carried out and the water obtained can serve any domestic use and, by adding a purifier of greater power, it can become

drinkable. An adequate use of this system can supply water to a household for 6 to 8 months per year.

4.2 From an idea to the formalization of a social organization (2009-2010)

Mexico City was chosen as the main market for Isla Urbana, or rather, its action context, due to the identified problems and the shortfall and inefficiency of the public system to solve them. The low-income regions of Mexico City and its metropolitan area concentrates 70% of the total population (+/- 25 million people, INEGI 2017⁴); these are the areas most affected by water-related problems. The entrepreneurs focused on marginalized and inaccessible neighborhoods, mostly isolated on hills.

Seeking for a better understanding of the problem, the entrepreneurs of Isla Urbana moved to *Cultura Maya*, a village in the south of Mexico City. They carried out over 30 installations (they only charged the material, which in turn was acquired mostly in hardware stores in the same neighborhood). The systems installed in that village could be regarded as a pilot model, which predated the formalization of this unprecedented social organization in Mexico. At the same time, in the end of 2009, Isla Urbana was legally formalized as a (non-profit) civil organization, with four other partners joining and forming an interdisciplinary group with very specific attributes and characteristics:

highly academic background: two of these partners are industrial designers, trained in the USA; another is a social anthropologist from *Universidad Autónoma Metropolitana* (a Mexican public university) and graduated from Penn State University, who was studying water harvesting; a geographer from Penn State University focused on urbanism, and an environmental engineer from *Universidad Nacional Autónoma de México* (a Mexican public university);

- youth: people whose age did not exceed 30 years;
- issues of interest related to social and environmental challenges: Mexico's water problem;
- high confidence in their proposal, high social commitment, and the ability to relate to others;
- · lack of experience in business and management.

⁴ Indicadores de bienestar por entidad federativa. Available at http://www.beta.inegi.org.mx/app/bienestar/.

Isla Urbana's formalization was achieved thanks to the financial and administrative support of the International Renewable Resources Institute (IRRI), which granted them a scholarship that year after they won its sustainable water management annual contest.

However, there is no legal figure in Mexico that can combine economic profits with social purposes, so civil organizations face an institutional barrier to generate their own income, which is not totally reinvested in the organization itself, but can instead support the founders and pay both their employees' salaries and their social projects.

The problem of funding the production and implementation of rainwater harvesting systems in marginalized communities that could not even pay the cost of production led the partners to establish a second company (in late 2009). This was called *Solución Pluvial S.A. de C.V.*; this is Isla Urbana's "self-income". Thus, the original entrepreneurship venture resulted in two different organizations, pursuing the same social purpose. Operationally, Isla Urbana conducts harvesting projects for low-income communities with no access to this vital resource,⁵ and Solución Pluvial sells the systems for those customers who can afford them (individuals, private companies and public institutions⁶).

The design and research of the harvesting systems offered by both organizations are in charge of Isla Urbana. Likewise, it imposes the dynamic conditions of higher quality for more efficient, less expensive and long-term systems. Its founders affirm, "the ongoing improvement of these systems is due, by more than 50%, to the close relationship Isla Urbana has with the benefited communities". They represent the main source for technical, technological and strategic development of this organization, while ensuring a successful adoption and proper use of the installed systems.

4.3 Expansion, spreading and diversification: the technological development period (2010-2017)

In 2010, Isla Urbana began its first large-scale project, in cooperation with the local government, which granted the relevant permits for its operation and some public

- Most of the people benefited from Isla Urbana have water access through water pipes. However, there are some populations with no water tankers (due to difficult access), so water is carried by carboys filled from a community faucet, generally two miles (3 or 4 km) away. This involves a significant time investment, as well as loss of income, since people often cannot work when waiting for water tankers.
- 6 Water in Mexico City is highly subsidized by the Government (between 80% and 90% of its actual cost). Therefore, one of its customers are government agencies, as they take over the actual costs of water.

funds. This project led to the installation of 120 rainwater-harvesting systems in the marginalized area of *Cerro Del Ajusco* (Ajusco hill). That year, Isla Urbana also participated in the BBC World Challenge and started the Ha Ta Tukari Project,⁷ in the sierra *Huichol* (mountain range), together with ConcentrArte⁸ (a social organization that disseminates education in rural areas through art and painting).

Furthermore, the first major improvement in the initial design of the system was achieved in 2010, replacing the first rainwater filtration system, based on sediments, with activated carbon filters. This significantly improved the water quality and the efficiency of the entire harvesting system.

In 2011, Isla Urbana achieved the national projection of its model after participating in the *Iniciativa México* (a national platform that provided economic support to scale selected social innovations). During this year, it also developed the *Tlaloque*, a new product that improved the entire process of filtration and disinfection of rainwater, allowing to reduce the costs of water treatment as well. For Isla Urbana, this product implied an important innovation in its initial system, which is still the base of its water harvesting system.

As a result of its projection, the enterprise received several opportunities for calls focused on promoting social entrepreneurship and innovation. Thus, in 2012, with economic support from a banking institution, the first Tlaloque scale lot was produced, and more than 200 systems were implemented in marginalized communities in the vicinity of the metropolitan area.

Isla Urbana has based its operating model on feedback from and collaboration with its beneficiaries. Therefore, since 2012, and in partnership with NGOs, it has implemented systematic visits and surveys that keep them informed on the use and adoption of their systems, as well as future needs and challenges. Likewise, for the manufacture of community cisterns, and even of the systems themselves, both beneficiaries and collaborators are part of the workforce, including the population in their own solution.

In 2012, Isla Urbana also joined Ashoka's network of social entrepreneurs, one of the main ISE promotion networks around the world, which gave it a certain prestige and a greater dissemination abroad. Other projects began in rural and very poor areas in Mexico during 2013, and the MIT Technology Review recognized the enterprise as one of the 35 most innovative projects in the world led by young people.

⁸ See http://www.concentrarte.org/>.

At the same time, Isla Urbana was introducing its first environmental education workshops, with the purpose of raising awareness to the (social, environmental and economic) value of water collection. These workshops have involved a business strategy that allows them to generate their own income and promote the sale of their systems. In other words, they can be seen as an innovation in Isla Urbana's business model, based on the diversification of their own financing sources.

In 2014, a common project was carried out with SEMARNAT, which included 106 collection systems in a rural town of the state of Hidalgo. This project also involved working in partnership with the population, who helped to build their own community reservoir. In addition, all the indigenous houses of the Ha Ta Tukari project had access to potable water by harvesting rainwater. At the end of 2014, more than 2,000 systems had been installed across Mexico.

The collaboration with other ventures has been crucial in making Isla Urbana more widespread. Their links with other social enterprises (such as ConcentrArte and Sistema Biobolsa), as well as with NGOs, have allowed them to share risks and extend the geographical scope of their impact. More than 8,700 systems have now been installed in Mexico, and they have harvested around 583 million liters of water and benefited more than 65,000 people.

The adaptation of the systems to the specific conditions of the place of installation has made possible to diversify their equipment and products. Isla Urbana currently offers more than 60 products and six different water harvesting and purification systems. Furthermore, in its effort to generate its own income and not depend entirely on external sources, it has diversified its services by offering workshops, conferences and specialized advisory services.

Starting as a type of family or friend organization, Isla Urbana now offers about 30 formal jobs (20 operational employees, nine senior managers and one director). In the implementation stage, the managers carry out fieldwork and support the operational employees; in other words, it is an organization with a horizontal and flexible structure that promotes the creation of ideas across all levels.

5. Discussion: determinants and nature of ISE innovation

5.1 Main determinants of the innovative behavior of a social enterprise

The case of Isla Urbana shows a set of critical determinants for the innovative behavior of a social organization/enterprise over time. First, this paper presents an analytical distinction between *internal* and *external determinants*, which helped to identify them at different (micro-macro) levels of analysis and time stages.

Internal determinants are directly associated with characteristics of the individual entrepreneur and the structure and business model of the organization that implements ISE. We found that the academic discipline of the entrepreneur, in this case, an industrial designer, as well as his personal experience with water collection, was crucial for the identification and consideration of the problem, as well as for the development of the initial solution/innovation. Likewise, the hybrid model of Isla Urbana raised the need to diversify its sources of income and, as a result, there was a stimulus for the creation of innovations in services (workshops and specialized advisory services).

Since its origin, the organization has maintained an inclusive strategy by mobilizing the human and material resources of the beneficiary population. On one hand, the inclusion of beneficiaries as part of their own solution has made it easy for them to effectively adopt and properly use rainwater-harvesting systems. On the other hand, the feedback received has been key for continuous system improvement and for the innovation of new products (e.g., Tlaloque). Therefore, internal determinants constitute the core of ISE.

Figure 2 below stylizes the creation and growth process of the ISE case considering internal and external determinants throughout that process. Internal determinants are represented by the small oval in the diagram and are crucial to define the social need and its possible solution. In other words, determinants associated with the entrepreneur and the organization are related to the early stages of the emergence and consolidation of the ISE venture, as well as to the initial solution/innovation. However, there are other aspects associated with the ecosystem/context, i.e., external determinants (WEERAWARDENA; MORT, 2006). The economic and non-economic support that Isla Urbana received from NGOs, private companies and some local governments has been decisive in turning an idea into a real solution, along with the expansion of its scope and impact.

Regarding the creation and growth process of the ISE, social problems such as inequality and social exclusion are the main drivers of these ventures. These problems define the needs of vulnerable populations, such as access to basic goods and services (e.g., water, health, education, etc.). Unmet needs "push" the generation of innovative solutions under a particular context: needs that are apparently unattractive in market terms. Therefore, the solution hardly comes from large and market-oriented firms, whose main and probably unique objective is economic profitability.

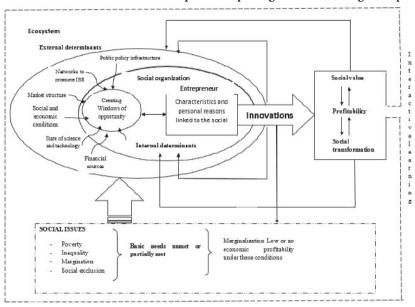


FIGURE 2

Determinants of Innovative Social Entrepreneurship along its creation and growth process

Source: Own elaboration

Certain individuals, who break with the dominant paradigm, understand these needs as opportunities for social transformation. These entrepreneurs have specific characteristics, such as being determined, ingenious, proactive, risk-tolerant and socially aware (ELKINGTON; HARTIGAN 2008; BOLUK; MOTTIAR, 2013). In the case of Isla Urbana, the problem of water scarcity was analyzed by a group of young people with a high level of academic training and a common interest to solve this problem in Mexico.

However, identifying and defining a social problem is not enough: the individual or the organization with an entrepreneurial vision must turn it into an opportunity to create a novel solution. At the same time, this opportunity can also be affected by external determinants, such as the existence of organizations that finance social projects focused on strategic sectors. The IRRI was the cornerstone for the first facilities of Isla Urbana. In addition, the scholarships and awards obtained from NGOs and other organizations have been crucial in the process of growth and expansion of its scope and impact. Other external determinants include market structure and socioeconomic conditions, for example, the lack of financial capacity of the population to pay for this service pushes for the creation of "simple" innovations that do not

demand high costs. In addition, by serving people with low levels of education, technology cannot be highly sophisticated either.

Science, technology and innovation (STI) and social policies have the potential to create windows of opportunity for such ventures (through financial support or public procurement) (PUUMALAINEN *et al.*, 2015). As described in section 4, Isla Urbana's largest projects have involved cooperation with local governments. In addition, SEMARNAT supported one of the most important and large-scale projects in an indigenous village.

However, political and institutional conditions can also block ISE; in other words, they could become a barrier for ISE. In the case of Mexico, the lack of a legal figure for hybrid models — that meet the social objective while generating income to sustain an organization —, causes many social ventures to disappear at the initial stage. Isla Urbana avoided this barrier through the parallel creation of a for-profit company, but this implied additional costs and double management work. Therefore, these determinants could play a dual role both by creating opportunities and favorable conditions to promote social enterprises or by blocking their consolidation.

Innovation, in the ISE analytical framework, may have a positive impact on the mitigation of social problems, which also affects ecosystem conditions and the perception of new social problems or needs. The cycle created during this process is part of an interactive learning space, in which various actors participate and collaborate, allowing for constant feedback and learning. In fact, one of the characteristics of ISE is the diversity of actors involved in all its stages, because of the complexity of the need they attend, as well as the social, economic and environmental implications of its innovations (DEES, 1998; RAMANI; URIAS, 2015).

5.2 Relationship between the determinants of ISE and the nature of its innovations

The set of internal and external determinants of the creation and growth of an ISE venture also affects the nature of the innovations it creates. The design of rainwater-harvesting system was a product innovation, mainly determined by the academic background of its founders (internal determinant), but also by the socio-economic conditions of a specific population (external determinant). In addition, as suggested by Alvord, Brown and Letts (2004), the adaptations and improvements of these systems were possible through the active participation and involvement of the population, both in the process of installing the systems and in post-installation

feedback, promoting bidirectional learning (TANDON, 2014). Furthermore, the access to networks of non-profit organizations has been a crucial external determinant for Isla Urbana, which has allowed it to access multiple sources of funding and link with other organizations, expand its scope and have a holistic impact beyond rainwater harvesting.⁹

Based on this evidence, Table 1 shows an analytical generalization regarding the effects of the main determinants associated with the innovative behavior of the social enterprise (identified throughout its creation and growth process). The first column divides these determinants into internal and external; the second column lists the effects of each determinant on the innovative behavior (of Isla Urbana). The last column shows the types of innovations created, which are associated with each determinant.

The flexible organizational structure of Isla Urbana has allowed the continuous improvement of its systems, and even the creation of new products. In addition, its inclusive strategy has been essential to build an emotional bond and feedback link with the benefited communities. This, in turn, has been reflected in incremental innovations and effective technological adoption. Therefore, we can state that one of the main sources of innovation in an ISE venture such as Isla Urbana is the inclusion of the population as part of its own solution.

The complexity of the problem to be solved, as well as the conditions of the context, led Isla Urbana to implement a hybrid business model, providing the project with a business aspect that offers rain-harvesting systems in the market while keeping its social mission. This model has allowed the generation of income, considering that in the future it would be possible to reduce the current dependence on external financing and achieve self-sustainability. In addition, its hybrid model allowed it to overcome the institutional obstacles of the Mexican context associated with legal forms of social ventures. This implied an innovation in its business model, as well as an organizational innovation.

Most of the innovations created by Isla Urbana do not coincide with conventional market mechanisms or the sources related to large R&D investments by firms. That is why their valuation does not depend –only– on their financial performance, but also on the social value generated and the effective acceptance and adoption of their technology. These latter are, in fact, the main mechanisms for validating innovation at the ISE level.

⁹ For instance, ConcentrArte has collaborated in workshops on environmental awareness and education based on art and drawing. Sistema Biobolsa collaborated with the implementation of systems for transforming animal waste into biogas and bio-compost (in rural communities served by Isla Urbana).

TABLE 1
Main determinants of the social enterprise and effects on creating innovations

Determinants		Effects	Type of innovation
Internal	Personal characteristics and motivations	Influencing: - The social enterprise's main purpose and definition of the problem; - Space/territory and context of action (scope); - Initial idea for the solution (strategy, choice of technology, etc.); - The conversion of an idea into reality (overcoming risks and obstacles); - Degree of novelty of the solution.	Disruptive innovations: - product or service - niche(s) of users and beneficiaries - business model
	Operational model or strategy	Determining: - Opportunity identification; - Financial viability of the project; - Entrepreneurship or organization sustainability; - Effective adoption of the offered solution; - Degree and type of social inclusion.	Incremental innovations: - products or services - processes - business model - organizational
	Social inclusion of the attended population	Allowing: - To identify and understand needs and characteristics (deficiencies, customs, other problems associated with the beneficiaries, etc.); - To know the problems associated with the use or understanding of the provided solution (whether or not technological) (bidirectional feedback and learning); - To generate emotional belonging and/or bonds; - To effectively adopt the proposed solution.	Incremental innovations: - products or services - processes - operational structure and model
	Business model	To delimit or eliminate dependence on external resources; To determine financial viability and (non-)sustainability of the venture in the long term; To achieve self-sustainability of the project or organization.	Disruptive or incremental innovation: - diversification of funding sources - services - product (differentiation according to market niche)
	Size and internal structure of the organization	- Creation of new ideas at all levels of the organization (either for the initial solution or for improving the already implemented ones); - Adaptation to changes in the conditions of the context; - Diversification of activities/products/ services; - Scope of the solution (impact); - Diversification of funding sources.	- Improved products or services - New or improved processes

(continua)

Determinants		Effects	Type of innovation
External	Public policy infrastructure (social and STI policy)	Driver or an obstacle for the emergence of innovative social enterprises; Become a strategic ally for effective viability and implementation of innovation in vulnerable and unprofitable contexts; One of the main funding sources; Accelerate or slow down the process of development, adoption and spreading of innovations.	- Business model
	Diversification of funding sources	- Determines conversion of an idea into viable reality; - Key for entrepreneurship sustainability (especially in the early stages and primary dissemination); - Accelerate the generation of new outcomes and social impacts (due to the demand for results or to the commitment made); - Urges the generation of economic returns (self-sustainability).	Innovation in the source of resources Organizational innovation Continuous or incremental innovation in the action strategy or operating model Improvements in the business model
	Access to national and international networks	- Facilitates the diversification of funding sources; - Promotes engagement and collaboration of different ISE ventures, social organizations and companies interested in the projects; - Strengthens holistic social impact or impacts on various fields; - Promotes generation and exchange of ideas and action strategies; - Allows the adaptation of solutions into other contexts.	Improvement of products and services New spreading forms
	Market structure (competition, supply and demand)	- Creates windows of opportunity; - Determines the scope of the solution (subject to demand); - Urges the generation of skills with the purpose of diversifying funding sources and achieving self-sustainability.	Disruptive innovation in product or service Incremental improvements of: products organizational skills market niches
	Specific socio- economic conditions of the community served	Imposes conditions for: - The type of solution needed; - Materials and technology to be used (in the case of products).	Disruptive innovation of products Innovation in the business model
	Scientific- technological conditions	Imposes conditions for: - Characteristics of the initial solution; - Progress and improvement of materials and technology.	Incremental product improvements New materials and supplies

Source: Own elaboration based on the interviews.

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In summary, innovation is necessary for the viability and sustainability of ISE. The innovation activity of social enterprises is based on the active participation of the beneficiary population and the understanding of the need that is attended, as well as its socio-cultural, economic and environmental implications. This requires both technological and tangible innovations (products, services and new materials, etc.) as well as non-technological and intangible innovations (e.g., business models, operational models or inclusive strategies).

6. Final reflections

This paper analyzes holistically the determinants of the innovative behavior of an ISE venture, during its process of creation and growth, and discusses the nature of the innovations created throughout that process. The work is based on literature that studies the characteristics and motivations of the social entrepreneur

(ELKINGTON; HARTIGAN, 2008; BOLUK; MOTTIAR, 2013), and social organizations/enterprises (POPOVICIU; POPOVICIU, 2011), as well as another body of literature that considers innovation as the main tool for solving the needs of vulnerable populations (AUSTIN; STEVENSON; WEI-SKILLERN, 2006; TANDON, 2014; ALEGRE; KISLENKO; BERBEGAL, 2017).

We introduced an analytical-conceptual distinction between internal and external determinants. The former refers to the entrepreneurial individual and the social organization, while the latter point to the conditions of the context or ecosystem where the social enterprise operates. The main internal determinants are: personal characteristics and motivations; an inclusive operative strategy; business model; and organizational structure. In turn, external determinants include: public policy infrastructure; diversification of funding sources; membership of national and international networks; market structure; socio-economic conditions; and scientific-technological conditions.

Based on a longitudinal and holistic study, the determinants were observed to have dissimilar effects at each stage of the ISE process, as well as on the type of innovations created. It is suggested that internal determinants referring to the entrepreneur are mostly related to the early stages of the ISE venture (before formalization). So external and internal organizational determinants are mainly linked to its formalization and growth.

The evidence reaffirms that the type of initial solution/innovation is directly related to the experience and skills of the entrepreneur (GUCLU; DEES; ANDERSON, 2002). For example, the founder of Isla Urbana is an industrial designer with a certain familiarity with rainwater harvesting. In turn, multi-stakeholder engagement promotes the diversification of products and services (improvements and/or incremental innovations), and a greater impact of the ISE endeavor. Actors with whom Isla Urbana has linked with have been key to the dissemination of water harvesting systems, also becoming a crucial source of financing to continue operation and product innovations.

Additionally, ISE innovations are the result of a mission-oriented process focused on novel strategies for the active participation of the population (social inclusion). The empirical evidence also suggested that ISE innovation has a strong intangible and non-technological content, mainly regarding the business model and its social inclusion strategy.

Likewise, the case shows that an important source of innovation comes from the inclusion of the population as part of its own solution, and not from large R&D

departments or the acquisition of foreign technology. Therefore, the mechanisms for the validation of an innovation in the social enterprise are associated with the type of solution addressed for a social problem and its effective adoption. However, it is suggested that the generation of economic profit in hybrid social enterprises is important to achieve the sustainability of the social impact, as well as of the organization that implements entrepreneurship.

Although a single case study does not allow for statistical generalization, this document contributes to a more holistic view of the possible determinants of ISE and the characteristics of its innovations. Therefore, beyond static conclusions, it seeks to open the discussion on the nature of innovation in social ventures. Future research needs to provide a broader and more detailed exploration of ISE cases with different business models, as well as their innovation processes and the main types of innovations created. We also invite the use of innovative methodologies that could provide generalizable statistical results and contribute to measure ISE innovation and its impact.

Finally, some of the policy recommendations which emerge from this study refer to the reformulation of legal figures for civil organizations in Mexico. The organizations are in constant change, and the existence of ventures that combine social purposes with a commercial activity to generate profitability is already a reality, which pushes to rethink the legal process for the registration of these "new organizations". Likewise, given the importance of the link between multiple and diverse actors, it would be worth thinking on the creation of intermediary institutions, with the mission of articulating the different objectives and promoting collaboration in the entrepreneurship arena in order to attain innovations that provide solutions to the main social problems in Mexico.

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