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Entrepreneurial, Innovative and Sustainable Ecosystems

Best Practices and Implications for Quality of Life

Springer

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Preface

The concept of entrepreneurial ecosystems has been attracting considerable attention in the fields of entrepreneurship studies, economic geography and regional studies as well as in policy consulting, seeking to foster firm births as a driver of regional development (Alvedalen and Boschma 2017). However, until now, there has been a lack of knowledge in terms of the best practices and implications for quality of life associated with this type of complex development platform.

Despite its growing relevance for regional policy (Startup Genome 2017; Startup Commons 2017), the concept so far has been applied almost exclusively in (successful) cases, and empirical findings have not been used to advance the ecosystem concept theoretically. Not surprisingly, it has been criticized as being 'underdeveloped' (Stam and Spigel 2016) and 'undertheorized' (Spigel 2017).

The holistic construct of an (E)ntrepreneurial, (I)nnovative and (S)ustainable ecosystem refers to the collective and transversal nature of entrepreneurship, innovation and sustainability. New firms emerge and grow not only because there are entrepreneurs that created and developed them. New ventures emerge also because they are located in an ecosystem made up of private and public stakeholders, which nurture and sustain them, supporting the inventive and innovative action of entrepreneurs.

According to Isenberg (2010), an entrepreneurial ecosystem consists of elements that can be grouped into six domains: (1) a conducive culture (e.g. tolerance of risk and mistakes, positive social status of entrepreneur), (2) facilitating policies and leadership (e.g. regulatory framework incentives, existence of public research institutes), (3) availability of dedicated finance (e.g. business angels, venture capital, microloans, crowdfunding, crowdsourcing, equity funding), (4) relevant human capital (e.g. skilled and unskilled labour, serial entrepreneurs, entrepreneurship training, coaching and mentoring programmes), (5) venture-friendly markets for products (e.g. early adopters for prototypes, reference customers) and (6) a wide set of institutional and infrastructural supports (e.g. legal and accounting advisers, telecommunications and transportation infrastructure, entrepreneurship promoting associations).

Based on this definition, governments can evaluate whether they have an EIS ecosystem and what actions they should take, knowing that each EIS ecosystem is unique and all elements of the ecosystem are interdependent. Successful dynamics often result from the identification of both comparative and competitive advantages founded on natural resources or specific assets, which may be very limited.

Following the previous work by Leitão and Alves (2016), this edited volume aims, firstly, to present a multidimensional approach by providing the state of the art on EIS ecosystems, as well as structural and changing dynamics and their impact on citizens' quality of life. Secondly, it aims to present a set of international benchmarking case studies on good practices and initiatives oriented to the creation and development of EIS ecosystems. Thirdly, it aims to be positioned as a reference guide for scholars, policy makers and practitioners interested in entrepreneurship, public procurement, new public management, innovation and sustainability.

In terms of knowledge transfer, these international benchmarks of EIS ecosystems should be able to be replicated, to foster the creation of entrepreneurial and innovative units and promote sustainable practices, under an open innovation paradigm, which needs to congregate both public and private stakeholders, using co-creation, transparency and participatory practices.

This volume is particularly opportune in that it contributes to the scarce literature on the subject of ecosystems' complexity and their importance in determining the quality of life of different communities and organizations. Nevertheless, it is a first organized attempt which should be continued, as within the complexity characterizing the different phases of an ecosystem's life cycle, namely, creation, development, growth, maturity, decline and regeneration, in pioneering terms, only the entrepreneurial, innovative and sustainable dimensions of ecosystems are portrayed here.

Based on the set of pioneering contributions collected in this volume, an entrepreneurial, innovative and sustainable ecosystem corresponds to what is formed by a natural environment and the communities of entities that inhabit it, interacting with each other and with the environment itself and resulting in a relatively stable system. Consequently, an ecosystem covers the set of communities that form a natural system, including different actors, such as producers, consumers and decomposers, underlining the importance of entrepreneurship, innovation and sustainability as critical anchors of the stages of creation, development and growth of that ecosystem.

Regarding the communities of bodies forming an ecosystem, relations can be established with different characteristics, namely, (1) competitive relationships, which imply a limited resource is disputed by various bodies, and so only the most able survive; (2) predatory relationships, which assume that one body, i.e. a predator, feeds on another, the prey (this type of relationship also allows regulation of the number of species and survival of the fittest, forming a mechanism to self-regulate the ecosystem); (3) parasitical relationships, where one or more smaller bodies, parasites, feed on another larger one, the host, which they live next to; (4) mutual relationships, around which there is a relationship that benefits both associated species; and (5) commensal relationships, where there is a type of relationship where one species is benefited without any detriment to the other.

However, various open questions deserve additional research efforts and the drawing up of new public policies to contribute in the future to better understanding of the role of ecosystems in determining citizens' quality of life, in different spatial units of analysis (e.g. town, region, country or common economic area) and according to the different phases of the ecosystem's life cycle.

Conceiving, designing and analysing ecosystems, with a view to increasing citizens' quality of life, means deepening knowledge about social network analysis and promoting the eclectic intersection of various branches of knowledge, namely, economics, management, psychology, sociology, mathematics, engineering and information systems, history, anthropology, etc.

Also necessary are metrics associated with key performance indicators (KPIs), which can be used in technological prospection exercises, aiming to improve quality of life, setting out from the different dimensions of ecosystems, in continuous evolution and therefore requiring continuous monitoring and correction.

The volume is formed of two parts. Part I deals with ecosystems' entrepreneurial, innovative and sustainable dimensions (EISE), which served as a basis for the structure of this edited volume. Part II presents a selected set of benchmarking cases originating in India, Mexico, Brazil, Finland, Denmark, Portugal and Italy.

Highlighted in Part I is firstly the work done by Michael Fritsch and Sandra Kublina, who propose four types of regional growth regimes, taking as a reference the type of relationship between new firm creation and the level of economic development. The authors analyse the characteristics of those regimes, aiming to identify the reasons for obtaining different levels of performance regarding growth. They identify typical transitionary tendencies between regimes, clearly suggesting that entrepreneurship is a factor leading to economic development, figuring among the factors that produce long-term effects on economic well-being at the regional level, thereby promoting quality of life.

Secondly, Jamile Rodrigues takes a pioneering look at the subject of local government committed to quality of life in the context of sustainable cities. The emphasis is on the need to create an urban ecosystem that is modelled and modified by people on a daily basis, despite non-sustainable methods being used. Adopting a descriptive and qualitative approach, the author analyses the contribution made by introducing sustainable practices in the city context, concluding that this option promotes not only sustainable local development but also quality of life.

Thirdly, José Luis Vázquez, Ana Lanero, Pablo Gutiérrez and César Sahelices present an innovative view of the contribution of *smart cities* to quality of life, according to citizens' perception. This study analyses the perceptions of a sample of 272 university students in Spain, regarding the local authority's present and ideal level of involvement in six dimensions defining a smart city (smart economy, smart people, smart governance, smart mobility, smart environment and smart living). The results reveal an important gap between real experience in the city and the perceived potential of the dimensions to improve quality of life in the future. The main gaps were detected in the dimensions of smart economy and smart governance.

Fourth, Romano Audhoe, Neil Thompson and Karen Verduijn propose expanding the approach of reference followed in this volume, i.e. integration of the entre-

preneurial, innovative and sustainable dimensions, coupling a so far unexplored theoretical perspective of historical-cultural activity. The authors underline the growing importance attributed to entrepreneurial, innovative and sustainable ecosystems, by both political decision-makers and the research community. Connecting to the theoretical approach of new public management, it is recommended that political decision-makers using this type of approach should be more enabled to better understand the links between the stakeholders of EIS ecosystems, which have a determinant role in stimulating the sources leading to local transformation, i.e. entrepreneurship and innovation, towards improving citizens' well-being (i.e. happiness, trust, safety and satisfaction). In this connection, the authors propose and explain a novel framework for analysing and assessing EIS ecosystems, i.e. activity system analysis (ASA), which is a methodological framework, rooted in cultural-historical activity theory (CHAT), assisting researchers by guiding analyses towards specific tensions and contradictions between stakeholders that prevent EIS ecosystems from developing. Additionally, it allows researchers to gain insights into the developmental trajectory of EISE and to understand the learning actions that transform them.

Fifth, Teresa Paiva, Luísa Cagica Carvalho, Cristina Soutinho and Sérgio Leal position product innovation as a mechanism with high value added to promote a region's sustainability, supporting their arguments through exploration of the case study on Douro Skincare. In the context of implementing so-called regional strategies of intelligent specialization (RIS3), the authors present the case of Douro Skincare, a company created by entrepreneurial women and operating in the field of selective biological cosmetics, through the creation, development and production of cosmetic products that use emblematic raw material from the Douro region, one of the oldest wine-producing regions in Europe.

Sixth, Fernando Herrera, Maribel Guerrero and David Urbano describe the determinant role of higher education institutions, as drivers of entrepreneurial and innovative ecosystems. From an evolutionary perspective, the authors position higher education institutions as drivers of entrepreneurial and innovative ecosystems in Mexico. They underline, on one hand, the importance of incentives for the configuration of the triple mission of this type of higher education institution and, on the other, the limited participation and weak involvement of this type of institution in entrepreneurial and innovative activities in the Mexican context.

Seventh, in the business ecosystem context, Zhaojing Huang, Clare Farruk and Yongjiang Shi approach the challenging work of commercialization, which covers the different mechanisms for transferring knowledge and technology, from academia to the market. In an innovative way, the authors approach the subject of commercialization, from the perspectives of scientists whose aim is to develop new products from high-quality research, which can be transferred and valorised. The authors present a theoretical approach, from a business ecosystem perspective, based on a literature review. That theoretical approach is contrasted through the development of a longitudinal case study about the development of a fibre optic sensor analyser with application in the construction industry. As the main results, the authors emphasize, firstly, the need for relationships with partners and other sup-

porting organizations to be established at an earlier stage than is suggested in the literature. Secondly, they highlight the need for scientists to develop a precise understanding of the business ecosystem, to which technology is adjusted, serving as support for the application of instruments of technological and innovative surveillance. Consequently, the anticipated focus on communication and partnerships is pointed out as a critical success factor in commercializing technology.

Part II presents a selected number of benchmarking cases originating in Italy, Mexico, Brazil, Finland, Denmark, Portugal and Italy. In the first case, Ranjini Swamy and Arbind Singh present an interesting support system for the entrepreneurial ecosystem of street sellers, developed by the National Association of Street Vendors of India (NASVI). After the liberalization movement, this system allowed the creation of an entrepreneurial ecosystem based on regulatory procedures defending the interests of street sellers, thereby contributing to improving the quality of life and sustainability of this type of subsistence entrepreneur.

In the second case, Mario Vázquez-Maguirre presents an example of a sustainable ecosystem applied to the situation in Southern Mexico, where the founding element is the community of indigenous social enterprises. The empirical evidence points to this type of company having developed new mechanisms based on their culture and cosmovision, which ultimately generate an ecosystem promoting the community's well-being. Highlighted among the mechanisms are accountability and transparency, legitimacy, equality policies, a participatory organizational structure, social innovation and entrepreneurial orientation. This case also demonstrates unequivocally how an entity's community perspective contributes to improving its employees' and their families' quality of life, making the local economy more dynamic and consolidating an ecosystem that promotes the host community's development. From a public policy perspective, the case also suggests actions that can promote the emergence of new business models to favour the integration of vulnerable communities in the global economy, following an approach of sustainability and collaboration.

In the third case, Ainomaija Haarla, Henri Hakala and Greg O'Shea present an exemplary case of the creation of the *Finnish cellulose entrepreneurial ecosystem*, illustrating the different phases of creating the ecosystem from a community-led initiative which involved three different stages, (1) community of dreams, (2) community of commerce and (3) creation of the ecosystem, which are described in detail in the case, serving as benchmarks for the actors involved. Concerning the main implications, the case reveals unequivocally that entrepreneurial ecosystems can be created and developed following a bottom-up approach, counting with community participation and being led by different types of public funding, as opposed to the more usual top-down approach, representing a better understanding of the associated roles and micro-processes which contributes to better grounding, creation, organization and coordination of the ecosystem's development.

In the fourth case, Simone Sehnem and Hilka Machado analyse the sustainable and social environmental practices of a sample of 50 Brazilian companies located in Santa Catarina. The main results reveal that the majority of environmental practices adopted by the firms studied include the monitoring of risks and opportunities for

organizations' activities, due to climatic change. Therefore, the majority separate waste and provide training in health and safety at work. However, they do not incinerate waste, do not use recyclable water and do not take on workers belonging to tribal Indian communities.

In the fifth case, Hugo Pinto and Carla Nogueira develop a pioneering application consisting of mapping an entrepreneurial, innovative and sustainable ecosystem in the Algarve region of Portugal, by resorting to an analysis of social networks focused on innovative projects receiving public funding. Starting from the Algarve case study, the authors use methods of social network structural analysis to map actors and centralities regarding cooperation and innovation in regional development. The mapping of the innovation network in the Algarve is compared to theoretical models of resilient networks with the statistical indicators of hierarchy and homophily. The empirical evidence facilitates the identification of gatekeepers, clusters of activities and constraints and potentialities for enhancement of the regional EIS ecosystem.

In the sixth case, Luís Mendes and Dalila Dias revisit the role of stakeholders in the value creation process, focusing on the sustainable dimension of ecosystems and exploring the relationship between practices of corporate social responsibility (CSR) and total quality management (TQM). Through a literature review, the authors systematize knowledge of how strategies based on CSR and TQM principles may create stakeholders' value and generate sustainable competitive advantages while improving the quality of life. The findings highlight that when thought proactively and strategically, sustainability-based approaches combining CSR and TQM are potential sources for obtaining sustainable competitive advantages and for improving the quality of life of the workforce and citizens in local communities in particular and even of society in general.

In the seventh case, Paula Ungureanu and Diego Maria Macri illustrate how hybrid partnerships help to set up, implement and then innovate business models. The authors exemplify the design of a hybrid partnership for open innovation where six public and private organizations came together with the intention to set up and implement joint innovation projects with a large-scale impact at the regional level. Two business models of hybrid partnerships are discussed in this chapter, the brokering model and the platform model, as well as the mechanisms of transition from the former to the latter. The findings suggest that while the platform model seems more appropriate for complex projects in which a wide number of heterogeneous interests coexist, both models present advantages and disadvantages.

In the eighth case, Alexander Kerl characterizes the development of an innovative ecosystem in an accelerated economic environment, using as the case of reference the Vodafone Open Innovation Program. The author formulates a research question based on an issue frequently faced by multinational companies with an innovative profile, i.e. by what kind of organizational framework are initiatives for multi-cross industry innovation supported, and how can companies utilize this approach to generate new innovation ecosystems? To answer the question, the author describes the organizational model of the Vodafone Open Innovation Program, identifying the structured nature of the programme and the so-called

staged intellectual property rights mechanism, as key characteristics potentiating new innovation ecosystems.

Finally, this volume is a step forward in the incomplete and demanding task of building a theoretical body on ecosystems, which requires the future coupling of new dimensions and perspectives of the (formal and informal) structuring and evolution of ecosystems but also the use of qualitative and quantitative methods to measure their evolutionary stage and performance, with a strong motivation to use network approaches in order to improve citizens' and consequently nations' quality of life.

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