



# Entrepreneurship & Regional Development

## An International Journal

ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/tepn20>

## The role of innovation and knowledge for entrepreneurship and regional development

Sascha Kraus, William McDowell, Domingo Enrique Ribeiro-Soriano & María Rodríguez-García

**To cite this article:** Sascha Kraus, William McDowell, Domingo Enrique Ribeiro-Soriano & María Rodríguez-García (2021) The role of innovation and knowledge for entrepreneurship and regional development, *Entrepreneurship & Regional Development*, 33:3-4, 175-184, DOI: [10.1080/22797254.2021.1872929](https://doi.org/10.1080/22797254.2021.1872929)

**To link to this article:** <https://doi.org/10.1080/22797254.2021.1872929>



© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 01 May 2021.



[Submit your article to this journal](#)



Article views: 9850



[View related articles](#)





[View Crossmark data](#)



Citing articles: 3 [View citing articles](#)



# The role of innovation and knowledge for entrepreneurship and regional development

Sascha Kraus <sup>a</sup>, William McDowell<sup>b</sup>, Domingo Enrique Ribeiro-Soriano<sup>c</sup>  
and María Rodríguez-García <sup>d</sup>

<sup>a</sup>Faculty of Economics & Management, Free University of Bozen-Bolzano, Bolzano, Italy; <sup>b</sup>Department of Entrepreneurship, Technology, and Law, Bradley University, Peoria, IL, USA; <sup>c</sup>IUDESCOOP Department, Universitat de València, Spain; <sup>d</sup>Department of Business Management, Universitat de València, Spain

## Introduction

The impact of entrepreneurial activity on regional economic growth continues to be a focus of research and policy-makers throughout our global environment (Carree and Thurik 2000; Agarwal, Audretsch, and Sarkar 2007). Entrepreneurial activity requires innovation when entrepreneurs move from initial disequilibrium towards equilibrium (Schumpeter 1954; Kirzner 1973). Emerging entrepreneurial ventures and the innovators behind these start-ups bring necessary change and positive growth when conditions are aligned for their success (Davidsson, Delmar, and Wiklund 2006).

Public administration and government policies should support both entrepreneurship and innovation as such support is necessary for organizations as they design programmes and develop policies for growth and sustainability (Galbraith et al. 2017). New ventures need talent, good ideas and a knowledge-based economy around them to positively impact regional development (Bouncken, Kraus, and Roig-Tierno 2019). Organizations tend to access knowledge from research sources, implicitly assuming that entrepreneurship and innovation involve developing social networks and collective actions (Huggins and Johnston 2009). The discussion concerning the space and scale of knowledge networks for innovation is important to clarify. Additionally, emerging entrepreneurial firms are highly active with regard to accessing knowledge from a range of sources and geographic locations; however, these networking activities may decrease during future periods of peak firm growth (Huggins et al. 2015).

Knowledge produces opportunities for technological change which can result in organizational growth or even startup activity (Shane 2001). This knowledge derives from a variety of resources such as larger organizations, research institutions, R&D activities, and more (Acs, Audretsch, and Lehmann 2013). Local regions that work to develop these networks and clusters of innovators and creators can realize growth opportunities for new ventures as well as small and medium-sized organizations which in turn can grow the regional economy. These regions, focused on incubating knowledge-based growth and development, create an ideal environment for further innovations and knowledge creation. This focus on knowledge creation within an environment may result in the development of innovative clusters and enhanced entrepreneurial ecosystems. While clusters represent similar firms within a geographic region focused on similar economic activities (Breschi and Malerba 2001; Clarkson et al. 2007), entrepreneurial ecosystems represent the collection of firms and domains of entrepreneurship that support these ventures and include six distinct areas: policies, finance, culture, supports, human capital, and markets (Liguori et al. 2019; Bendickson et al. 2020).

---

**CONTACT** Domingo Enrique Ribeiro-Soriano  [domingo.ribeiro@uv.es](mailto:domingo.ribeiro@uv.es)  IUDESCOOP Department, Universitat de València, Spain

© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.  
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

Clusters of these emerging entrepreneurial firms create a wake of innovation and accomplishment (Scott, Hughes, and Kraus 2019) which can be the catalyst for other innovators. This happens, however, only when market and policy conditions are favourable with an opportunity for success. The study of these entrepreneurial firms and the systems of support that surround them have taken form through areas of research such as entrepreneurial ecosystems (Nambisan and Baron 2013; Liguori et al. 2019), innovation clusters (Isaksen 2016), knowledge-based economies (Waxell and Malmberg 2007), and other areas of entrepreneurial inquiry. The interplay between the interests of research centres such as universities and local high-tech economies is associated with broader technological trends and with the capacity of these universities to draw on national funding programmes (Smith and Bagchi-Sen 2012). Furthermore, a source of growth and competitiveness can be found in the innovative interplay among local actors and institutions as the region serves as an 'incubator' for small and medium-sized organizations. The result of these kinds of processes, however, can be considerable regional determinism. Global networks or distant knowledge sources seem to be particularly beneficial to innovation, so organizations should participate in knowledge networks at all spatial levels. The role of the virtual space, both as an interaction space and as a complementary dimension, makes it possible to gain new insights into knowledge formation in a digital world (Aslesen, Martin, and Sardo 2019).

The global and competitive landscape has been transformed by the role of knowledge and innovation. One area that has seen exponential growth due to the increase in innovation is in technology (Ferreira, Fernandes, and Kraus 2019). In particular, digital technology has transformed communication, transportation, and even the way that individuals and businesses interact and socialize (Kraus, Roig-Tierno, and Bouncken 2019). This explosion in technological innovation and digital transformation provides myriad opportunities for business development, research opportunities, and regional development. This is realized not only in the growth of new firms and industries seeking to capitalize on new markets, but it has also created new business models that change and disrupt consumer behaviour and even the development of human talent. Technology creates strong opportunities for innovation and economic growth.

Influenced by the evolution of digital technology, a major transformation of established industries and the global business landscape is taking place. In particular, the intersection between digital technologies and entrepreneurship provides ample research opportunities, as digitalization can help address the disputed assumption of the differentiation between innovation processes and outcomes (Nambisan 2017). Technological change not only helps to create new productive assets and opportunities to compete with old industrial models, but also enables the design of new business models and supports radically new strategies to boost development, even in rural areas (Gillespie, Coombes, and Raybould 1994). Consequently, the digital economy is characterized by a constant battle between traditional and emerging ecosystems and between old and new business models (Kraus et al. 2018). Digitalization might alter the nature of entrepreneurial activity. In fact, entrepreneurship enquiry should not be seen as a social science, but rather as the science of the artificial (Simon 2019). Contrary to this suggestion, however, digital entrepreneurial activity may occur in a broad range of groups or contexts where necessary resources or capabilities are lacking (Dy, Marlow, and Martin 2017). These groups may be highly heterogeneous in terms of nature, characteristics, degree of development, cultural values or geographical location. Thus, the effective management of digital strategy involves understanding the forces and causes that explain performance differences between individuals, groups, organizations and economies (Ross, Beath, and Sebastian 2017), whilst identifying the key resources for companies to create and sustain competitive advantages within a regional development context.

One key differentiation of this radical innovative society that may distinguish this current technological business revolution from previous technological change eras is the reality that spatial proximity may no longer be as important as it once was. Innovation and knowledge play an important role in the development of entrepreneurial activity, and entrepreneurship is a vital part

of regional growth. Given some current technological opportunities, it is vital for regional development to focus on knowledge-based solutions for regional firm support that will enable local start-ups to compete in the increasingly global marketplace. Instead of fighting between traditional and emerging ecosystems and old versus new business models, regional policymakers should envision and work towards an entrepreneurial ecosystem that capitalizes existing local opportunities while creating a structure that supports the full potential of these firms in the digital marketplace.

As Cooke and Leydesdorff (2006) indicated in their discussion on knowledge-based economies, the essence of a region includes the policies and governance systems which can either facilitate or hinder economic progress and development. Schumpeter (1934) noted the importance of knowledge to economies as he made the connection between innovation and entrepreneurial activity. Economic regions can work to further development of knowledge and innovation through the support of entrepreneurs (Breitenecker et al. 2017), or they can hinder economic growth through policies and governance systems that are a hindrance for entrepreneurship.

There are nine papers in this special issue of Entrepreneurship and Regional Development that focus on a wide array of the named topic areas, investigating *the role of an innovation- and knowledge-based economy for entrepreneurship and regional development*. Each of these papers makes a unique contribution to this ongoing body of research which is important for future research and for policymakers dedicated to improving the economies of their regions. Through this wide lens approach to entrepreneurship and regional development, opportunities for future growth and development are possible.

## Contributions

In the quantitative study 'Analyzing the macro-level determinants of user entrepreneurship. The moderating role of the national culture', Kalisz et al. focus on the impact of country-level factors on user entrepreneurship in the health-care sector. The authors verify new functioning models of entrepreneurship and how they contribute to the achievement of competitive advantage. The rapid increase in the popularity of user entrepreneurship analyses at the international level makes it clear that a paradigm of new, innovative forms of value creation is emerging. The authors' observations suggest that national economies with existing internal cultural connections should emphasize benchmarking activities and look for cultural activities' patterns supporting user entrepreneurship. There are economies where healthcare is strictly homogeneous – private or public, related to how it is financed and is also significantly reflected in citizens' perception. These divergences are complexed in nature, but they determine principles and pace of development and the sector's limitations. With that said, the study creates a clear path to indicate limitations in interpreting the meaning of entrepreneurship creation at the national level and its relation to existing models of entrepreneurship management. Without any doubt, the study inspires future advanced analysis of user entrepreneurship related to the health-care sector. The study results take into account the essential factors that are macroenvironmental at the level of national analysis. Notably, the user-entrepreneur process is not always effective as it carries some risks. Nevertheless, user entrepreneurship at the national level attracts interest and triggers lively discussion. The authors highlight this trend and hope to increase national entrepreneurship's practical usefulness by improving its theoretical development. One of the paths of the most significant interpretation of this study moves the entrepreneurship optics towards a variety of cultural values at the individual level that are likely to produce heterogeneous effects on becoming a successful entrepreneur.

In their inquiry of entrepreneurial success, Jiao et al.'s paper 'Financial Wealth, Socioemotional Wealth, and Founder Exits: An Empirical Examination of Chinese IPOs' investigates both the financial and non-financial explanations of founder exits after IPOs. Founder-CEOs in post-IPO ventures tend to consider both the choices of financial wealth (becoming the rich) and socioemotional wealth (remaining the king). Using a novel empirical setting, this paper challenges the dominant paradigm, which assumes that CEOs are forced to leave involuntarily due to poor performance or negative

events. Based on new venture IPOs from China, they examine the systemic relationship between the level of the founder-CEOs' financial wealth (stock ownership) and socioemotional wealth (the founder-CEO's tenure, ratio of insiders on the board, the age of the local stock market) and their exit from their ventures. This study focuses on 130 IPOs in China whose founder-CEOs left the firm after it went public. Findings point to a behavioural agency model in which both the financial and socioemotional wealth explains founder exits after IPOs. These can enhance the understanding of founder exits, financial wealth and socioemotional wealth. They found a strong interaction effect between financial wealth and socioemotional wealth. Specifically, this contribution illustrates that: (1) There is a behavioural agency model by linking founder-CEOs' financial wealth with their socioemotional wealth in their determinations about whether to leave their companies after the firms go public. Until the ownership level reaches a certain point, founder-CEOs do not focus on loss aversion. (2) Founder-CEOs' socioemotional wealth will negatively moderate the impact of financial wealth on their likelihood of leaving after an IPO. Amassing a great deal of socioemotional wealth will make founder-CEOs less inclined to risk losing it when faced with the choice of losing their financial wealth. (3) Longer tenure leads to stronger identity with the firm. Having more insider board members is likely to promote group consensus. Going IPO in a more mature IPO market offers greater stability of deal network. All these can increase in socioemotional wealth that will offset founder-CEO's concerns associated with the loss of financial wealth. This study makes several important theoretical contributions to the entrepreneurial literature. First, behavioural agency model perspective yields an important managerial and policy insight into the 'dark side' of venture IPOs. They provide alternative perspectives on founders' exits through the behavioural agency model. Second, it also contributes to the behavioural agency model by introducing the new theoretical perspective of the founder's socioemotional wealth into the model. Socioemotional wealth can raise the reference point, reducing the CEOs' tendency to exit to secure their financial wealth. Thirdly, this study also offers a new understanding of the post-IPO dynamics in emerging markets. In particular, its perspective successfully integrates the competing viewpoints regarding the founders' risk-taking vs. loss aversion in the behavioural agency model.

The study 'Innovation and the Knowledge-Base for Entrepreneurship: Investigating SME Innovation across European Regions using fsQCA' by Beynon et al. considers regional innovation across Europe, which is important because of the increasing role that innovative capacity plays in economic competence and competitiveness for all global economies. There is currently a gap in the literature in respect of analysis using configurational approaches able to capture the complex, interrelated and nuanced nature of what drives innovation in widely differing regions. This topic is important because policies to support innovation will have different effects in low and high-income regions. The dataset used in this study is taken from the European Union Regional Innovation Scoreboard (RIS) 2019 data set. The data set is comprehensive and encompasses 236 regions across 25 European countries, focusing on four potential, interlinked, conditions of potential relevance to small and medium-sized enterprise innovation, specifically measures focused on levels of human capital, internal firm innovation, innovation collaborations and broader knowledge collaborations between the public and private sector. The methodology employs a configurational approach to identify relationships, specifically fuzzy-set Qualitative Comparative Analysis (fsQCA) to evaluate how these conditions affect, at a regional level, the proportion of SMEs sales from either new-to-the-market or new-to-the-firm (NMFS) innovations. The results found in addition to the existence of the classic 'core' region 'innovation ecosystem' recipe having the presence of three of the four conditions (in-house innovation being non-relevant), the analysis reveals that innovation policy may require to be specifically tailored in certain types of regions. For example, when education and co-production are both absent, collaboration can still create a beneficial presence of NMFS outcome, whilst when education alone is absent SME in-house innovation can still create a beneficial presence of NMFS outcome. This suggests that greater collaboration is required to overcome more extensive absence of other parts of the Regional Innovation System (RIS), whilst in-house innovation is required to overcome a lack of education alone. The central contributions of the study are to generate a more

comprehensive evaluation of the complexity of innovation at the level of the region, A graphical 'map' based illustration of findings also contributing to the study's 'scene setting' for European regions on this SME-innovation issue. As such, the cross-sectional nature of this study must be regarded as an initial benchmarking analysis, upon which future longitudinal analysis can be built. Thus, the field can move to more dynamic theories of SME innovation in regional contexts and practitioners will learn more about the development of conditions necessary for the most beneficial SME innovation outcomes.

Claiming for a greater focus on an entrepreneurial perspective in the context of natural protected areas, Piñeiro-Chousa et al.'s article 'Sustainable tourism entrepreneurship in protected areas. A real options assessment of alternative management options' proposes a conceptual and methodological decision-making framework based on Real Options Analysis (ROA) to implement an adaptive management of their tourist use. They highlight the relevant contribution that tourism entrepreneurship in protected areas can make to regional development, largely neglected by previous research. The difficult balance between conservation objectives and socio-economic development demands further efforts to integrate into the management of protected areas the competing interests of the diverse stakeholders involved in their tourism exploitation (tourism entrepreneurs, residents, visitors, and governmental authorities). Moreover, decision-makers are confronted with high levels of uncertainty in relation to both the evolution of the number of visitors and the ecological consequences of its increase. Beyond the restrictive application of the carrying capacity principle to limit visitors' pressure, they suggest a flexible and adaptive management of the number of visitors, ultimately related to the intensity of the tourism entrepreneurship in the protected area (i.e., measured through the number of places offered for accommodation). Traditional Cost-Benefit Analysis (CBA) is not well suited to deal with uncertainty and flexibility, that are, conversely, natural ingredients of ROA. Under their combined CBA-ROA approach, they consider that greater tourism entrepreneurship leading to a higher visitors' pressure should be balanced against the impacts that such higher pressure could have on the use and non-use values attached by visitors to the natural space. Thus, permanent monitoring of visitors' preferences combined with flexible management of the entrepreneurial opportunities derived from the tourism use of protected areas could facilitate its positive contribution to sustainable regional development. It is straightforward to acknowledge that tourism entrepreneurship in protected areas should openly embrace sustainability as the only reasonable paradigm to guarantee the balance between economic and conservation objectives. Protected area managers are, thus, encouraged to promote a sustainable tourism entrepreneurship able to make compatible a higher tourism activity with higher use and non-use visitors' values. In a context of limited public budgets and restricted funds to attend conservation costs, the proposed framework can also facilitate the analysis of public investments in protected areas, or the establishment of strategies of payment for ecosystem services such as the enacting of visitor fees. Their analysis of the controversial tourism exploitation of Ons Island, in the Marine-Terrestrial National Park of the Atlantic Islands of Galicia (Spain), shows that the required infrastructure investments to develop a sustainable tourism use of the island would not be justified under management strategies that do not deal with uncertainty and flexibility. However, when considering these two strategic factors under a ROA valuation framework, the additional value derived from them demonstrates the value creation potential of an adaptive management of the number of visitors and, consequently, of the intensity of tourism entrepreneurship. Future research will also find in this paper interesting avenues to further advance our knowledge about the entrepreneurial features of the tourism use of protected areas.

In the innovation and entrepreneurship's perspective, Nieto et al.'s paper 'The habitat of university and non-university startups' shows evidences about the habitat to allow start-ups to grow. Using a multilevel analysis for explaining the components and the degree of importance of entrepreneurial activity in these start-ups, they compile a unique dataset of 242 Spanish-based technology start-ups in 2019 and distinguish between university (122) and non-university start-ups (born in science parks). Demographic data, company's characteristics, entrepreneurial profiles, financing

policies and type of growth are some of the 40 variables included in the analysis, as well as issues related to innovation and development. The four-step statistical process used in the paper allows them to analyse this high number of variables used in the study: first, a descriptive methodology allows university and non-university start-ups to be compared through their mean and their standard deviation; second, two specific variables are studied using a Chi-squared Automatic Interaction Detection regression model (CHAID): generation of patents and access to financing resources; third, a factor analysis is proposed using the Bartlett test in order to identify different entrepreneurial profiles. In this sense, the Varimax rotation is proposed in order to obtain the load matrix of the factors; and finally, the fourth statistical step is a logit regression model in order to determine which factors are the most significant to explain the probability of being a technological company with university support. Two contributions of this paper are highlighted: first, non-university start-ups present greater professional experience. These entrepreneurs have acquired previous experience in other jobs and have decided to implement their knowledge in a new company. For that reason, their greater sector knowledge provides innovation abilities for competing in the international market. The motivations of this kind of entrepreneurship are to develop a new deal through a new company and to enjoy family and work life at the same time, and second, entrepreneurs in university start-ups are characterized by higher levels of education. Their networking generates more relationships with university companies. Greater internal and external research and development is created closely linked to greater access to alternative financing resources such as through European partners. Their motivation is based on an innovation cycle with a higher percentage of patents. In summary, both university and non-university start-ups go through the same hosting cluster and have very similar business networks.

Welsh et al.'s paper 'How much do network support and managerial skills affect women's entrepreneurial success? The overlooked role of country economic development' analyse data from 22 countries at a different level of economic and competitive development, according to the Global Competitive Index from the World Economic Forum. From a theoretical viewpoint, this article integrates the Resource-Based View (RBV) of the firm and Industrial Organization Theory, two of the most influential frameworks in management and entrepreneurship literature, to explain how asymmetries in the firm's resources lead to competitive advantage and success. Industrial Organization Theory has a significant influence on understanding regional and country competitiveness and has also been used to respond to entrepreneurship phenomena across countries. Resource-Based View focuses on the business, while Industrial Organization Theory relates primarily to the external business context. Both the external and internal contexts are essential for the success of the venture. The article suggests that it is the interaction between the entrepreneurship resources with the industrial conditions of the competitive context entrepreneurs' face, which determines women's entrepreneurial success. The results confirm the positive influence of managerial skills on entrepreneurial women's annual incomes in countries at high competitive development levels. However, in countries at low levels of competitive development, the results are negative. In family and external support, the hypothesis related to family financial and moral support is confirmed and only partially confirmed for non-family financial and moral support. Family financial and moral support has a positive and significant influence on entrepreneurial success in highly competitive countries but a negative and significant impact in low competitive countries. Regarding non-family financial and moral support, results only showed support for the relationship between non-family financial support and women's' entrepreneurial success. The relationship was positive in countries at high levels of competitive development and negative for countries at low competitive development levels. The latter result is explained by the fact that entrepreneurs are forced to use more expensive, less formalized, and non-efficient institutions in less developed countries. Welsh and colleagues contribute to research by combining two theoretical frameworks (RBV and Industrial Organization Theory), which are typically used separately to explain the entrepreneurship phenomena. The study provides evidence to explain how contextual conditions entrepreneurial success will be better defined by one framework or another. Importantly, this combined approach also explains what

would be contradictory results under the Resource-Based View. Especially in countries at a lower level of competitive development, the industrial context's importance stands out. Thus, this research contributes to the literature on the Resource-Based View in analysing entrepreneurial activity and success. The study also contributes to the understanding of Industrial Organization Theory applied to entrepreneurship by explaining how country competitiveness (institutional development and market efficiency) interacts with entrepreneurs' resources to explain venture success. Finally, this study contributes to the understanding of cross-cultural entrepreneurship.

Bing et al.'s 'The Impact of Entrepreneurship on Regional Economic Growth: A Perspective of Spatial Heterogeneity' holds that most of the research on the impact of entrepreneurship on regional economic growth adopt the method of default that the influence coefficient is spatially invariant and does not change with the change of spatial position, which obviously violates the heterogeneity or non-stationary rule of spatial relations in the real geographical world. Based on the existing Geographically Weighted panel Regression (GWPR) model, they proposed a spatial panel variable coefficient model, MGWPR-SAR model, which not only applies to spatial panel data, but also considers spatial autocorrelation and spatial heterogeneity. Therefore, it has a wide application prospect. The combination of it and the classical C-D production function can well describe the spatial heterogeneity influence of entrepreneurship on regional economic growth. In the process of modelling and analysing the China's data after the subprime crisis (2010–2016), they also considered the endogenous problem of mutual causality between entrepreneurship and economic growth, and gave a detailed and rigorous parameter estimation process. The result shows that, on the one hand, the influence of entrepreneurship on China's regional economic growth in the eastern coastal areas is generally greater than that in the central and western regions, and the central region is significantly larger than the western region, that is, the influence shows a gradual decrease from east to west. On the other hand, the impact of entrepreneurship on economic growth is not always positive. Both eastern and central regions have a positive role in promoting economic growth, while most western regions have a negative impact. Finally, they put forward corresponding policy suggestions. The local government and the media should cooperate to guide and create a 'business respecting' culture of the whole society and give entrepreneurs a higher social reputation and status. To better stimulate and protect entrepreneurship, the local government should promote the opening of scientific and technological resources to private enterprises and small and medium-sized enterprises, guide financial institutions to support entrepreneurs' innovation and entrepreneurship, improve the entrepreneurship insurance, guarantee, and risk-sharing system, and build a fault-tolerant mechanism for innovation and entrepreneurship. For underdeveloped regions, while improving the infrastructure in the region, the government should develop industries with comparative advantages according to their own resource endowments, pay attention to the spatial spillover effect of innovation and entrepreneurship activities, eliminate market barriers between regions, and strengthen the information and resource flow between adjacent regions, so as to provide greater space for the spatial spillover effect of innovation and entrepreneurship.

In their update of the Seed Accelerators phenomenon, Cánovas-Saiz et al.'s 'A quantitative-based model to assess Seed Accelerators' performance' provide a new framework to better understand the impact and prospects of both the Accelerators and their tenant firms. SAs are organizations helping entrepreneurs to develop sounder and more profitable projects with the hope to take profit from their support. Despite the growing acceptance and diffusion of SA programmes all over the world, little is known yet about their role in job creation, investment, start-up survival, and economic growth, leaving many entrepreneurs hesitant about the usefulness of applying to these acceleration programmes basically oriented to start-ups. Their study intends to bridge this gap by gaining new evidence on the components of the SAs that matter more in the eventual success of their tenant firms. Keeping this purpose in mind, the authors have conducted a broad fieldwork that involves two surveys. First one gathers a set of 131 global SAs founded between 1997 and 2019, while the second one contains an extensive set of 10,116 accelerated start-ups that participated in the acceleration programmes of these 131 SA's. On the whole, the fieldwork involves two cross-section databases



built with data compiled by the end of 2019. Unlike previous studies, mostly of qualitative nature and single-country based, this paper is a pioneer in using an extensive quantitative analysis of SAs and start-ups worldwide that allows to obtain sound and statistically significant results. As a result, new empirical evidence regarding the performance of SA programmes has been found in a context plenty of uncertainty about how accelerator performance should be measured. Both a binomial and an ANOVA regression analysis were performed to test two hypotheses. First one will disclose the factors that promote, or deter, the attraction of funds towards their participating companies. The second one seeks to unveil the specific characteristics of SAs that influence the survival rate of the accelerated start-ups. The survival rate of start-ups has been found to be higher in SAs offering larger amounts of funding, in the oldest ones and in those located in the United States. However, the relationship between business acceleration and business survival remains unclear. The findings linked to the first hypothesis seem sounder. The portfolio size of accelerators, their start-ups' survival rates, and the number of employees in the accelerated firms, are the factors with a positive effect on the funding received by the accelerated start-ups. Unexpectedly, the number of previous exits and investments made by accelerators has a negative impact on the funding they invest in their start-ups. In summary, Cánovas-Saiz et al. make a contribution to the literature on entrepreneurial ecosystems and more specifically on the Accelerators phenomenon. The findings attained are valuable not only to SAs and entrepreneurs but also for policymakers who want to promote entrepreneurship-based regional development.

In their paper entitled 'Flagship enterprises, entrepreneurial clusters, and business entry rates: Insights from the knowledge spillover theory of entrepreneurship,' Anokhin et al. investigate dominant regional corporations and entrepreneurial clusters as a source of innovative opportunities that may spill over to potential start-ups and affect regional entry rates. They suggest that flagship enterprises are likely to provide such opportunities to would-be entrants, whereas entrepreneurial clusters tend to appropriate most of them for intra-cluster commercialization and not let valuable opportunities leave clusters' borders thus suppressing entrepreneurial entry. Basing their empirical investigation on the multi-year study of new venture formation dynamics in all 88 counties in the State of Ohio, they provide empirical support to their claims. They also demonstrate that the negative effects of clusters weaken when local unemployment rates are high. Their study is among the first to extend the knowledge spillover theory of entrepreneurship to flagship enterprises and entrepreneurial clusters, and it provides non-trivial implications for policymakers in terms of potential policies to support entrepreneurship, as well as for entrepreneurs considering their location options.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## ORCID

Sascha Kraus  <http://orcid.org/0000-0003-4886-7482>

María Rodríguez-García  <http://orcid.org/0000-0001-9626-0349>

## References

- Acs, Z. J., D. B. Audretsch, and E. E. Lehmann. 2013. "The Knowledge Spillover Theory of Entrepreneurship." *Small Business Economics* 41 (4): 757–774. doi:10.1007/s11187-013-9505-9.
- Agarwal, R., D. Audretsch, and M. B. Sarkar. 2007. "The Process of Creative Construction: Knowledge Spillovers, Entrepreneurship, and Economic Growth." *Strategic Entrepreneurship Journal* 1 (3/4): 263–286. doi:10.1002/sej.36.
- Aslesen, H. W., R. Martin, and S. Sardo. 2019. "The Virtual Is Reality! On Physical and Virtual Space in Software Firms' Knowledge Formation." *Entrepreneurship & Regional Development* 31 (9–10): 669–682. doi:10.1080/08985626.2018.1552314.

- Bendickson, J. S., J. G. Irwin, B. J. Cowden, and W. C. McDowell. 2020. "Entrepreneurial Ecosystem Knowledge Spillover in the Face of Institutional Voids: Groups, Issues, and Actions." *Knowledge Management Research & Practice* 1–10. doi:10.1080/14778238.2020.1768810.
- Bouncken, R. B., S. Kraus, and N. Roig-Tierno. 2019. "Knowledge-and Innovation-based Business Models for Future Growth: Digitalized Business Models and Portfolio Considerations." *Review of Managerial Science* 1–14. doi:10.1007/s11846-019-00366-z.
- Breitenecker, R. J., R. Harms, A. Weyh, D. Maresch, and S. Kraus. 2017. "When the Difference Makes a Difference—the Regional Embeddedness of Entrepreneurship." *Entrepreneurship & Regional Development* 29 (1–2): 71–93. doi:10.1080/08985626.2016.1255432.
- Breschi, S., and F. Malerba. 2001. "The Geography of Innovation and Economic Clustering: Some Introductory Notes." *Industrial Corporate Change* 10 (4): 817–833. doi:10.1093/icc/10.4.817.
- Carree, M. A., and A. R. Thurik. 2000. "The Impact of Entrepreneurship on Economic Growth." In *Handbook of Entrepreneurship*, edited by D. B. Audretsch and Z. J. Acs, 437–471. Boston: Kluwer Academic Publishers.
- Clarkson, M., M. Clarkson, M. Fink, and S. Kraus. 2007. "Industrial Clusters as A Factor for Innovative Drive—in Regions of Transformation and Structural Change: A Comparative Analysis of East Germany and Poland." *Journal for East European Management Studies* 12 (4): 340–364. doi:10.5771/0949-6181-2007-4-340.
- Cooke, P., and L. Leydesdorff. 2006. "Regional Development in the Knowledge-based Economy: The Construction of Advantage." *The Journal of Technology Transfer* 31 (1): 5–15. doi:10.1007/s10961-005-5009-3.
- Davidsson, P., F. Delmar, and J. Wiklund. 2006. *Entrepreneurship and the Growth of Firms*. Cheltenham: Edward Elgar.
- Dy, A. M., S. Marlow, and L. Martin. 2017. "A Web of Opportunity or the Same Old Story? Women Digital Entrepreneurs and Intersectionality Theory." *Human Relations* 70 (3): 286–311. doi:10.1177/0018726716650730.
- Ferreira, J. J., C. I. Fernandes, and S. Kraus. 2019. "Entrepreneurship Research: Mapping Intellectual Structures and Research Trends." *Review of Managerial Science* 13 (1): 181–205. doi:10.1007/s11846-017-0242-3.
- Galbraith, B., R. McAdam, J. Woods, and T. McGowan. 2017. "Putting Policy into Practice: An Exploratory Study of SME Innovation Support in a Peripheral UK Region." *Entrepreneurship & Regional Development* 29 (7–8): 668–691. doi:10.1080/08985626.2017.1325939.
- Gillespie, A., M. Coombes, and S. Raybould. 1994. "Contribution of Telecommunications to Rural Economic Development: Variations on a Theme?" *Entrepreneurship & Regional Development* 6 (3): 201–217. doi:10.1080/08985629400000012.
- Huggins, R., H. Izushi, D. Prokop, and P. Thompson. 2015. "Network Evolution and the Spatiotemporal Dynamics of Knowledge Sourcing." *Entrepreneurship & Regional Development* 27 (7–8): 474–499. doi:10.1080/08985626.2015.1070538.
- Huggins, R., and A. Johnston. 2009. "Knowledge Networks in an Uncompetitive Region: SME Innovation and Growth." *Growth & Change* 40 (2): 227–259. doi:10.1111/j.1468-2257.2009.00474.x.
- Isaksen, A. 2016. "Cluster Emergence: Combining Pre-existing Conditions and Triggering Factors." *Entrepreneurship & Regional Development* 28 (9–10): 704–723. doi:10.1080/08985626.2016.1239762.
- Kirzner, I. 1973. *Competition and Entrepreneurship*. Chicago: University of Chicago Press.
- Kraus, S., C. Palmer, N. Kailer, F. L. Kallinger, and J. Spitzer. 2018. "Digital Entrepreneurship: A Research Agenda on New Business Models for the Twenty-first Century." *International Journal of Entrepreneurial Behavior & Research*. doi:10.1108/IJEBR-06-2018-0425.
- Kraus, S., N. Roig-Tierno, and R. B. Bouncken. 2019. "Digital Innovation and Venturing: An Introduction into the Digitalization of Entrepreneurship." *Review of Managerial Science* 1–10. doi:10.1007/s11846-019-00333-8.
- Liguori, E., J. Bendickson, S. Solomon, and W. C. McDowell. 2019. "Development of a Multi-dimensional Measure for Assessing Entrepreneurial Ecosystems." *Entrepreneurship & Regional Development* 31 (1–2): 7–21. doi:10.1080/08985626.2018.1537144.
- Nambisan, S. 2017. "Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship." *Entrepreneurship Theory and Practice* 41 (6): 1029–1055. doi:10.1111/etap.12254.
- Nambisan, S., and R. A. Baron. 2013. "Entrepreneurship in Innovation Ecosystems: Entrepreneurs' Self-regulatory Processes and Their Implications for New Venture Success." *Entrepreneurship Theory and Practice* 37 (5): 1071–1097. doi:10.1111/j.1540-6520.2012.00519.x.
- Ross, J. W., C. M. Beath, and I. M. Sebastian. 2017. "How to Develop a Great Digital Strategy." *MIT Sloan Management Review* 58 (2): 7.
- Schumpeter, J. A. 1934. *The Theory of Economic Development*. Cambridge: Harvard University Press.
- Schumpeter, J. A. 1954. *History of Economic Analysis*. Psychology Press: Hove, United Kingdom.
- Scott, S., M. Hughes, and S. Kraus. 2019. "Developing Relationships in Innovation Clusters." *Entrepreneurship & Regional Development* 31 (1–2): 22–45. doi:10.1080/08985626.2018.1537145.
- Shane, S. 2001. "Technological Opportunities and New Firm Creation." *Management Science* 47 (2): 205–220. doi:10.1287/mnsc.47.2.205.9837.
- Simon, H. A. 2019. *The Sciences of the Artificial*. MIT press: Cambridge, MA.

- Smith, H. L., and S. Bagchi-Sen. 2012. "The Research University, Entrepreneurship and Regional Development: Research Propositions and Current Evidence." *Entrepreneurship & Regional Development* 24 (5–6): 383–404. doi:[10.1080/08985626.2011.592547](https://doi.org/10.1080/08985626.2011.592547).
- Waxell, A., and A. Malmberg. 2007. "What Is Global and What Is Local in Knowledge-generating Interaction? The Case of the Biotech Cluster in Uppsala, Sweden." *Entrepreneurship and Regional Development* 19 (2): 137–159. doi:[10.1080/08985620601061184](https://doi.org/10.1080/08985620601061184).