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## Editorial

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## **1 Introduction**

Economic development is, according to the new endogenous growth theory, to a large extent determined by the accumulation of knowledge. At the regional level, it is about change processes that relate to location and migration of companies and households. An important part of regional economic growth can thus be modelled as induced by changes in knowledge, technology, organisation and localisation. Endogenous growth models usually treat knowledge capital as an independent production factor, which in any case partly has the character of a public good. Part of the new knowledge generated by an economic agent in a region will, over time, be transferred to other economic agents in the same region, but also to economic agents in other regions. To understand how knowledge flows affect regional economic growth and how regional policy can influence regional economic growth it is important to understand the role and function of different learning mechanisms and knowledge channels. Learning involves social interaction that is often face-to-face in nature and relates to proximities between actors that stimulates information and knowledge exchange and the accumulation of skills and competence, which boosts the productivity of employees and firms (Karlsson and Gråsjö, 2014).

Learning and innovation often occurs through highly interactive, iterative, network-based processes. Interactive regional learning involving various actors is considered a precondition for successful innovations and, hence, for regional development (Schneider et al., 2019). Exploring innovation strategies to enhance research and development, has become one of the most critically important industrial policies for government. Innovation is a mutual process that involves the coordination of distributed knowledge across various organisations. Technology infrastructures provide innovation systems with governance mechanisms to create and sustain complementarities across otherwise dispersed competences (Consoli and Patrucco, 2008).

Asheim and Coenen (2005) argue that the analysis of different kinds of regional innovation systems must take place within a context of the actual knowledge base of various industries in the economy. Regional policy about innovations has in the last decades been shaped by ‘best practice models’ derived from high-tech areas and well performing regions and the policies are often applied in a similar way across many types of regions, but it is evident that there is no ‘ideal model’ for innovation policy as innovation activities differ strongly between central, peripheral and old industrial areas (Tödting and Trippel, 2005). Furthermore previous studies are indicating that there is an increasing role for regional policymakers must both recognise and develop policies for forms of knowledge that have not traditionally been considered central to their activities (Bernhard, 2016) and that local competitors coordinated in networks can gain knowledge transfer and boost the attractiveness of a region (Olsson et al., 2018). Furthermore, the related concept of ‘smart’ cities – often referred to as digitally supported, innovative, progressive, sustainable social and technical systems, has gained recent interest among researchers from different areas and given the potentials of digital technologies as enabler and facilitator of entrepreneurship, researchers have recently called for more research on the effects of the digital transformation on entrepreneurship (Nambisan, 2017).

Moreover, economic development policy is increasingly focused on small and medium-sized enterprises (SMEs), which highlights the issue about the roles and interactions of government policy, universities, and other sources of knowledge (Clifton et al., 2010). Universities have for a long time been involved in knowledge transfer activities. However, the last decades have seen major changes in the governance of

university-industry interactions. Knowledge transfer has become a strategic issue as a source of funding for university research and as a policy tool for economic development (Geuna and Muscio, 2009).

Although research on theories of entrepreneurship and regional development has been around for many years (e.g., Carree and Thurik, 2003; van Praag and Versloot, 2007; Karlsson and Gråsjö, 2013), where entrepreneurship is regarded as a major driver of innovation, growth and economic welfare, more recently researchers have begun to take an interest in the relationship between knowledge transfer, innovation, and entrepreneurship for regional development (Remdisch et al., 2016; Varga, 2009). The change processes induced by entrepreneurship and innovation behaviour in the Schumpeterian sense are put forth as important drivers of well-being of regions. Still there is a need for more research on knowledge transfer, innovation, and entrepreneurship for regional development. This special issue contributes to an increased understanding of innovation and entrepreneurship from both theoretical and empirical viewpoints to provide readers with a range of studies. The contributing authors highlight the importance of knowledge and knowledge transfer for regional development.

This is an introduction to the special issue on ‘Knowledge transfer, innovation, and entrepreneurship for regional development’ in the *International Journal of Entrepreneurship and Small Business* surveys a collection of nine papers, a first version of each of which was presented at the 20th Anniversary Uddevalla Symposium, June 2017, Trollhättan, Sweden. The symposium was arranged by University West, Trollhättan, Sweden in cooperation with Jönköping International Business School, Sweden and George Mason University, Schar School of Policy and Government, USA.

## 2 The articles in this special issue

The nine articles collected in this special issue bring up many important issues regarding the role of knowledge transfer, innovation and entrepreneurship for regional development. Leading off, H. Lawton Smith and R. Waters take as starting point the role that universities and other higher education institutions (HEIs) play in providing skills to regional economies with their links with research and innovation, forms a key element in the European Unions’ (EU) smart specialisation agenda. The UK policy is in tune with that of the EU. This article investigates patterns that emerge from ‘first destination’ data for all the UK universities on where graduates begin work and what they actually do in successful regions, comparing this with recent policy rhetoric, for example in the UK’s Industrial Strategy, the Adonis Growth Review 2014 and the 2013 Witty Review of Universities and Growth. It illustrates reality using case studies of Oxfordshire and Buckinghamshire which are both adjacent geographically and are among the most competitive places in the UK, albeit with rather different HEIs. It addresses the issue of spatial differences, examining whether different patterns of skills matching emerge in different regions even in adjacent regions. It also reflects on spatial mobility: whether and how the migratory behaviour of skills influences education-job match.

The second article examines the processes of building innovation capacity, within a regional innovation system. O. Zaring, S. Szücs and M. McKelvey analyse a case study of technological development in a region, leading us to propose a conceptual model to explain how and why the development of a common resource pool of scientific and

technological knowledge in turn leads to regional innovation capacity. The model visualises the proposition that a process of governance enables actors to exploit a set of regional resources (incentives, networks, global relations), whereby collectively creating industrial opportunities. The model is thereby used to predict that the success and directionality of specific technology in the region is dependent on establishing an organisational structure for exploiting said resources collectively. This contributes to understanding the governance of innovation systems because the authors' proposed organisational structure, once established, will protect and channel knowledge and resources to the heterogeneous participating actors (regional government, universities, firms).

In the third contribution J. Han and A. Heshmati discuss innovation and SMEs patent propensity in Korea. The authors argue that in general, all inventions are patented. However, there are numerous innovative activities that do not come under the coverage of patent protection even though patenting an innovation in different contexts remains vital. This contribution analyses patent propensity as an outcome of innovative activities of regional SMEs. To achieve this, it does a robust regression analysis to estimate models to test five research hypotheses related to patent propensity using 263 firms participating in collaborative R&D with universities located in the Gwangju region in Korea. The empirical results show that a CEO's academic qualifications are positively related to propensity to patent. The findings also show that a CEO's intention to pursue new knowledge through open innovations is more relevant for patent propensity than public incentive policy instruments for making SMEs innovative by adapting innovation manuals, including the number of patents.

In the fourth article M. Okuyama, K. Sakakura, T. Maeno and T. Yasui discusses, from a case study view point, an open innovation model over a horizontal network by applying the open innovation theory on SMEs in Japan. The purpose of this research was to verify that building an open innovation model over a horizontal network in regional clusters of SMEs, by applying the open innovation theory, was effective to accelerate the creation of new products. The authors were able to prove using design structure matrix (DSM), which visualises dependency between various elements that one of the main contributing factors for SMEs clusters to be able to generate open innovations, was the deepening of human networks and relationships. Next, they verified using a well-being survey that an improved subjective level of well-being of the constituent members was a contributing factor. As a demonstration of this model, the study used the 'Shitamachi Bobsleigh Network Project' in Ota City, Tokyo, where there was a concentration of SMEs. This research verifies the efficacy of a model in which new open innovation was generated and subjective levels of well-being was improved, by deepened human relationships and horizontal networks within regional clusters of SMEs.

M.Y. Josefsson and R. Smari Steinthorsson reflect in the fifth article in this special issue, in their conceptual article 'smart' cities and 'smart' specialisation. SMART refers to digitally enabled, innovative, progressive, green and sustainable/technical systems. The focus is on 'smart' as an interactive innovative ecosystem further illustrated through the concept of triple and quadruple helix systems. The article argues that a 'smart' city strategy should aim to build on uniqueness that can be enabled through tapping and connecting 'smartness' to the available assets and resources that enhance and complement the existing ecosystem. The 'smart' city and 'smart' specialisation approaches leverage existing human, social and relational capital. They foster redesign and extension of established value chains and further activate and mobilise knowledge

and innovation clusters to create more opportunities and development towards a more sustainable urban future. The discussion in this contribution is based on SMART Reykjavik, the capital of Iceland. As Iceland is a small island state and Reykjavik a small city, the 'smartness' is also addressed in relation to small island state context.

In the sixth contribution P. Rouchy, S. Tavassoli and J. Wernberg, brings together the two important distinctions in the study of entrepreneurship; the difference between full time and hybrid entrepreneurship and the difference between productive and unproductive or predatory entrepreneurship. They combine the literature on hybrid entrepreneurship, primarily identifying significant differences compared with full time entrepreneurs, with an adapted framework to distinguish different motives for entrepreneurial effort aimed at productive or unproductive and predatory outcomes. This provides an overview which allows identifying potential venues for further research to understand both hybrid entrepreneurship and the role it may play in the economy.

The seventh article in this special issue by D. Sherif and B. Rios, examines entrepreneurial culture and its national cultural fit based on two of the cultural dimensions within Hofstede's theory and the Global Entrepreneurship Index (GEDI) ranking, while comparing these with the actual entrepreneurial outcomes in Pakistan, Egypt, and Zambia. The GEDI ranking indicates the potential for countries to be responsive to entrepreneurial investment, which can impact the willingness of investors to venture into a country. Although the three countries have lower GEDI rankings, they have shown considerable entrepreneurship potential based on GEI's (or its partner programs) country reports. Additionally, when using two of Hofstede's cultural dimensions to assess openness for entrepreneurial initiatives, the three countries did not seem to provide a supportive ecosystem for entrepreneurial initiatives; other factors appear to have buffered these negative cultural forces. The analysis will demonstrate that cultural dimensions and GEDI may no longer be effective indicators for the success and sustainability of donor programs targeting entrepreneurial initiatives and interventions. To better understand how a country's culture impacts entrepreneurial initiatives, this conceptual paper proposes the need for an alternative construct to gauge favourable entrepreneurial environment, which has huge policy implications for global angel financing, venture capital, and seed funding. The analysis shows that the presumed correlation between some cultural dimensions, GEDI rankings, and the creation of successful start-ups may not always hold. Start-ups seem to provide a counter-cyclical cushion in low-income countries to survive periods of economic downturn in cultures that do not support new ventures and risk taking. This analysis will help prompt further research geared towards building a better assessment model that incorporates socio-cultural perspectives, politico-economic regulatory factors, and technological infrastructures.

In the eighth article, O. Olsson explores backer behaviours from the perspective of equity crowdfunding (ECF). ECF is a new source of early stage finance where ordinary people are the investors. In this context, investors are called backers and their behaviours are complex and less understood. The contribution of this paper is to explore differences between backer investment behaviours. This is important as it further positions equity backers in this literature but also enables a discussion over attitudes and management of uncertainty from a portfolio theory perspective. The paper presents evidence of differences among backer investment behaviours. It also indicates that some behaviours are similar to those used by professionals in early stage investment. This adds to the ECF

literature but also supports previous findings of investor behaviour within the early stage domain. This suggests less focus on uncertainty or perhaps high degree of specialisation to manage uncertainty. However, 16% of the crowd (572 investors) invest in multiple campaign portfolios. The investment patterns in these portfolios mainly look like diversification used by professionals to manage the portfolio uncertainty. In addition, backer diversifiers seem to invest more in industries above the average investment level versus backer specialists that are more neutral in this aspect. Hence, part of the crowd seems to care about uncertainty and also seem to manage it in a professional manner.

In the final paper, A. Levy and R. Baha stress that prediction of credit risk and commercial bankruptcy has been widely discussed in the financial and accounting literature whatever the international financial accounting standards. Various methods have been used to construct prediction models that can be adapted according to the country, the sector of activity and the nature of the data to be used. These methods have shown their effectiveness compared to traditional financial analysis for classification of companies. This paper aims to compare the predictive power and the classification performance of the linear discriminant analysis (LDA) model with those of the logistic regression (LR) model on a sample of SMEs belonging to the Algerian private sector.

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