

Knowledge Spillover-based Strategic Entrepreneurship

Edited by João J. Ferreira, Leo-Paul Dana and Vanessa Ratten

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Over the past two decades, the theory of (endogenous) growth, the knowledge spillovers (KS) theory and the theory of entrepreneurship have converged to constitute a particularly promising and vigorous new paradigm at the crossroads of different disciplines (economics, management, political science, economic geography): the knowledge spillover theory of entrepreneurship (KSTE) (for a recent survey, see Ghio *et al.*, 2015).

The basic idea underlying KSTE can be expressed by two arguments. The first is that entrepreneurial opportunities, that is, the opportunities for innovation by entrepreneurs arise from KS, that is to say, natural mechanisms by which a firm absorbs knowledge externalities, in other words knowledge produced elsewhere, in other organizations. The second argument is that such an entrepreneurship is the source of economic growth.

The book edited by João J. Ferreira, Leo-Paul Dana and Vanessa Ratten, which brings together more than 30 internationally recognized experts in the field of KS and entrepreneurship, is a decisive step forward in the exploitation and exploration of this new paradigm. The paradigmatic nature of KSTE is illustrated, in the chapters of this book, in particular, by the ability of KSTE to integrate a wide variety of problems, in different contexts, at different analytical levels (micro, meso and macro), and within different scientific disciplines.

Besides an introduction by the editors, which is actually an overview of the notion of *Knowledge Spillover-based Strategic Entrepreneurship* and a conclusion that draws up a research agenda, the book is divided into three parts consisting of four or five chapters each.

The first part is devoted to KS in different geographical (local, regional, national) or socio-economic (rich regions, regions in difficulty) contexts. In this part, two contributions that could have been addressed one after the other, given their common subject (Chapter 2, Liliana Araújo, Sandra Tavares Silva and Aurora AC Teixeira and Chapter 5, Manuela A Neves, João J. Ferreira and Fernando Ferreira), are devoted to KS in economically disadvantaged areas. These contributions are particularly interesting and welcome insofar as research on KS tends to favour knowledge and technology-intensive developed areas. They therefore fill a scientific gap. Both chapters highlight the role that KS can play in innovation and hence in the economic performance of firms and propose strategies and policies to promote these KS (particularly from HEIs, which are no longer merely teaching and research entities, but also transfer entities, which bridge the gap between academic research and business).

Faithful to the objective of this part to cover various socio-economic and geographical contexts, the other two chapters are devoted, one to an emerging country, namely Turkey (Chapter 3, Basak Dalgic and Burcu Fazlioglu), the other to relational spillovers across European regions (Chapter 4, Daniela Di Cagno, Andrea Fabrizi, Valentinal Meliciani and Iris Wanzenböck).

Chapter 3 (which could have been included in Part 3 of this book) highlights the role of multinational firms in the emergence of so-called export spillovers, in the case of Turkey. The interactions (horizontal, i.e. intra-industry or vertical, i.e. inter-industry) of domestic firms with multinational firms are in fact the source of learning about export,



implementation of export decisions and export performance, for domestic firms. The chapter empirically validates the idea that export spillovers are an additional process to productivity spillovers. While there is an extensive literature dedicated to productivity spillovers generated by foreign direct investments (FDI) (i.e. the impacts of FDI on the productivity of domestic firms), this is not the case for exports spillovers. Thus, this chapter fills a double gap. It brings a new empirical validation of export spillovers, and it does it for an emerging country: Turkey.

The context of Chapter 4, for its part, is European and regional. This chapter is devoted to the effects on knowledge of the relational spillovers that are generated by belonging to a network, regardless of geographical distance. The chapter takes as an example the joint research projects carried out within the European Framework Programmes. These programmes contribute to the creation of supranational research networks that establish a relational proximity, which makes it possible to co-produce and share knowledge, that is to say, that generate special spillovers known as relational spillovers. This chapter confirms the existence of relational spillovers across European regions/nations and it shows that the scale and nature of spillovers (whether relational or geographic) differ according to the R&D institutional sectors envisaged, namely private companies, public research centres and universities. As far as the main indicators of knowledge creation mobilized are R&D and patents, the analysis is focused on research projects in the field of Science and Technology. It would undoubtedly be interesting to slacken this scientific and technical bias by focusing on research projects in the field of human and social sciences. In the latter case, given the absence of heavy experimental facilities, the effect of relational proximity (relational spillover) may, by nature, outweigh that of geographical proximity (geographical spillover).

The second part of the book addresses KSTE through its integrated facets “entrepreneurship” and “strategic management”. The four chapters in this section are devoted to different expressions of strategic entrepreneurship, which reflects, for companies, the quest for wealth by solving the tension or by the integration between the search for competitive advantages and the identification and exploitation of entrepreneurial opportunities.

Chapter 6 (Connie Zheng) is based on the concept of “institutional entrepreneurship” to account for a first expression of strategic entrepreneurship, namely how government, universities and enterprises (the so-called triple-helix model) interact to build a new technological city in China. While individuals and organizations usually strive to conform to established institutions, institutional entrepreneurship involves individual or collective actors who, in order to satisfy given interests, mobilize resources to introduce structural change: to transform existing institutions or create new ones. Institutional entrepreneurship is a paradoxical concept insofar as it combines two notions (entrepreneurship, institutions), which encompass contradictory forces: one of change and the other of stability. In this case, it is a university research institution (CUG-IGE) which, through its links with both central and municipal governments, is considered as an institutional entrepreneur as far as it ceases to be a mere “knowledge broker” to become a true profit-seeking company, while incubating more than 20 associated firms setting favourable conditions for KS. The institutional entrepreneur is thus an agent which blurs the traditional organizational and functional boundaries, and which, in a way, favours what one might call a “genetic mixing” in the triple helix.

The next chapter (Chapter 7, Sara Fernández López, María Jesús Rodríguez-Gulías and David Rodeiro-Pazos) is devoted to a form of entrepreneurship originating from university (academic entrepreneurship, or university spin-offs), focusing on knowledge-intensive business services (KIBS). KIBS, i.e. professional and technological consultancy and engineering services are not only the most innovative service sector, but as knowledge processing and producing machines, they also support innovation activities in other organizations (Gallouj and Djellal, 2015). They may not only play the role of facilitator, diffuser of industrial innovation, but also the role of sub-contractor or co-producer of this

innovation. Given their strategic role in the leveraging of strategic entrepreneurship and KS and in the development of innovation systems, KIBS play an essential role not only in highly innovative countries but also in moderately innovative countries. Chapter 7 is devoted to these KIBS, in the case of Spain. This chapter compares academic KIBS firms (spin-offs of new companies from universities) to non-academic firms especially focussing on their respective performance. The empirical investigation carried out on a sample of 135 Spanish KIBS firms highlights a superior performance (in terms of employment and sales growth) of academic KIBS firms compared to non-academic KIBS firms. This justifies public policies to support academic KIBS and the chapter proposes some recommendations in this area.

Strategic entrepreneurship is addressed in Chapter 8 (José Ricardo C. Andrade, João J. Ferreira and Vanessa Ratten) through a review of the literature on the concept of ambidexterity, that is to say on how organizations manage to reconcile exploitation and exploration, incremental innovation and radical innovation. This particularly dense and comprehensive survey is based on the main context and structure mechanisms that can contribute to organizational ambidexterity: leadership, human resource practices, organizational culture, process, structural units separation. It is also based on the tensions that make it possible to understand ambidexterity: tensions between differentiation and integration, individual and organizational, static and dynamic, internal and external, according to the typology established by Raisch *et al.* (2009). Beyond the systematic survey of an extensive literature, this chapter tries to bring management theory and practice closer by showing that ambidexterity is not only an academic and theoretical concept (which is often criticized), but also a concrete tool for managers.

The final chapter in Part 2 (Chapter 9, Ronald C. Beckett and Gerard Berendsen) is devoted to strategic entrepreneurship in terms of “generic” roles that aim to process knowledge for exploitation or exploration purposes. On the basis of a review of the literature, the chapter highlights three types of champions: innovation champions, strategic entrepreneurship champions, knowledge spillover champions and it derives from that typology five generic roles facilitating innovation, entrepreneurship and KS. It illustrates these categories through two case studies, one from the Netherlands and the other from Australia.

The third part of the book is entitled “strategic and international knowledge”. It brings together a number of chapters, some of which address from different perspectives issues already discussed in the two previous parts of the book.

Thus, Chapter 10 (Fernando Herrera, Maribel Guerrero and David Urbano) has a certain similarity with Chapter 6 regarding its object. In both cases, the purpose is to examine the interconnectivity between academic organizations and firms, and in both cases the context is that of emerging countries (Mexico in Chapter 10, China in Chapter 6). The main difference is that, in Chapter 10, the firms concerned are established firms, whereas in Chapter 6 they are new firms. Thus, Chapter 10 is devoted to interconnectivity between firms and universities that established innovation or strategy collaboration in Mexico. It explores the probabilities of collaboration between universities and firms according to different types of innovation (product innovation, process innovation, mixed innovation).

Chapter 11 (Frank Shiu, Connie Zheng and Mei-Chih Hu) can also be read in conjunction with Chapter 3, since both are concerned with the role of KS in international economic transactions. While Chapter 3 focusses on the export spillovers related to FDI, Chapter 11, for its part, focusses on the transfer of knowledge within strategic alliances. It accounts for the way the alliance partners manage and transfer the knowledge and for the impacts of this process on collaborative outcomes and partners performance. It is based on a comprehensive longitudinal case study: the transfer of knowledge between Kodak and the Taiwan’s Industrial Research Institute.

Similarly, Chapter 14 (Paul K. Couchman, Andrew O’Loughlin, Ina McLoughlin and Vanesa Ratten) is devoted to KS in the context of Australia. It could have been included in

the first part of the book (“Knowledge spillovers in multiple contexts”). Its inclusion in Part 3 is due to the fact that it addresses the issue of “localized innovations spaces” in an original way. It considers that the analysis of these “innovations spaces”, which take different forms and are designated by different terminologies (science cities, innovation corridors, technology corridors, technology districts, science habitats, etc.) cannot only be addressed from an economic perspective but also from a political perspective in its symbolic and rhetorical rather than instrumental dimension. The chapter therefore pursues the objective “to put the political back into the economy”.

Finally, Chapter 12 (Daniel Feser and Till Proeger) and Chapter 13 (Dennis Lyth Frederiksen and Alexander Brem) introduce in the discussion two key theoretical concepts of knowledge management, transversal to the whole set of chapters of this book, namely “knowledge filters” and “absorptive capacity”. The concept of “knowledge filter” reflects the existence of barriers to KS. It explains the gap between new knowledge and its commercial exploitation. On the basis of an empirical investigation in the energy efficiency consultancy sector, Chapter 12 develops the idea that the heterogeneity of professional identities acts as a filter of intra-sectoral knowledge, constituting a barrier to KS and consequently a limitation to regional and national innovativity. Thus, paradoxically, the diversity of professional backgrounds in the sector in question is a barrier to cooperation in innovation. The construction of more homogeneous professional identities through, for example, the establishment of professional associations can help to reduce the knowledge filter effect. Absorption capacities addressed in Chapter 13 are also a way to cross knowledge filters. However, even if the knowledge filter meshes are large (non-binding), the commercialization of knowledge may suffer from insufficient absorption capacities. Thus, in the analysis of barriers to KS, the concepts of absorption capacity and knowledge filter can usefully be mobilized in a complementary way. On the basis of a bibliometric work, Chapter 13 provides a theoretical overview of the evolution of the concept of absorptive capacity since its initial formulation by Cohen and Levinthal, more than a quarter of a century ago.

Each chapter of this book contributes important insights to our understanding of knowledge spillover and strategic entrepreneurship, and the book as a whole provides essential research avenues on the theme. To the avenues for research suggested by the book we can add some others. We will content ourselves here with questions that aim to help loosen a certain technological and industrial bias in our analyses of entrepreneurship and KS.

As far as, in contemporary economies, most of the entrepreneurship takes place in services, it is necessary to focus more closely on KSTE within services. In this book, services are not absent. But they are only present through the limited forms of HEIs and KIBS originating from universities. The analysis should focus more on KS related to non-KIBS services. Services innovation studies have developed from opposing assimilation approaches to demarcation approaches, with the assumption that services are different from goods and require a distinctive approach. We should also consider a demarcation analysis for service entrepreneurship in its relations with KS, in other words a service-oriented KSTE, which would stand out from the manufacturing-biased traditional KSTE.

The search for specificity could also be envisaged to address social entrepreneurship and social innovation in their relationships to KS. This question and the previous one are of course closely related to the question of the nature of knowledge which is favoured when looking for KS. The focus on service innovation and social innovation and the corresponding forms of entrepreneurship is a way to slacken the scientific and technical bias that consists in favouring S&T knowledge (based on an R&D activity and leading to patents) to the detriment of knowledge in H&SS and organizational engineering.

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