UNIVERSITÄT BERN

CRED
CENTER FOR REGIONAL
ECONOMIC DEVELOPMENT

Entrepreneurship in Peripheral Regions: A Relational Perspective[1]

CRED Research Paper No. 6

Sandra Bürcher, Antoine Habersetzer, Heike Mayer
Institute of Geography & Center for Regional Economic Development
University of Bern

August, 2015

Abstract

The aim of this paper is to conceptually discuss differences in entrepreneurial dynamics in peripheral regions from a relational perspective. We argue that successful entrepreneurship in peripheral regions depends on two different types of relations, namely economic relations in a strict sense, consisting of relations firms form to acquire relevant business knowledge (heritage approach), and economic relations in a wider sense, consisting of relations entrepreneurs form to shape regional contexts (embeddedness approach). We assume that the competencies necessary to engage in such networks are the same for both types of relations. This aspect may explain differences between peripheral economies and their economic development.

[1] This is an accepted manuscript of a book chapter to be published by Routledge in "Geographies of Entrepreneurship", which is edited by Elizabeth Mack and Haifeng Qian.

1 Introduction

Entrepreneurship is often seen as a major driver of economic change (Malecki, 1994; Metcalfe, 2004) and regional development dynamics – particularly in peripheral regions – are shaped by the ways in which individual entrepreneurs discover, evaluate and exploit business opportunities (Shane, 2003). The importance of investigating entrepreneurial behavior from a geographic perspective is understandable when bearing in mind that entrepreneurial activity tends to spatially cluster, and is thus very unevenly distributed in space. In recent years, economic geographers have started to examine regional disparities in entrepreneurship (Audretsch, Falck, Feldman, & Heblich, 2012; Bosma & Schutjens, 2011). However, these studies often focus on core regions and many insights about entrepreneurial behavior are derived from the urban context. Less prominent are studies of entrepreneurial dynamics in peripheral regions (Baumgartner, Pütz, & Seidl, 2013; Benneworth, 2004; Freire-Gibb & Nielsen, 2014; Vaillant & Lafuente, 2007). Moreover, regional disparities in entrepreneurial behavior are rarely examined when talking about differences *between* peripheral areas. Such a perspective recognizes the heterogeneity of peripheral regions and might help us understand why certain peripheral regions are more successful than others.

In the context of peripheral areas, several structural and relational factors hamper entrepreneurial agency and thus reduce the competitiveness of peripheral regions. However, differences between peripheral regions are very accentuated (OECD, 2006) and highly entrepreneurial and globally competitive firms can also be found in peripheral regions (Simon, 2009). Yet, insights why some peripheral regions show successful entrepreneurship, while other similarly disadvantaged and peripherally located regions do not, are sparse and more research is needed to understand the drivers and barriers of entrepreneurship in the periphery.

In this paper, we review determinants of divergent entrepreneurial dynamics in peripheral regions by employing a relational perspective. We argue that successful entrepreneurship in peripheral regions relies on two different types of relations: on the one hand, economic relations in a strict sense, consisting of relations firms form in order to acquire relevant business knowledge; and on the other hand, economic relations in a wider sense, consisting of relations entrepreneurs form in order to shape regional contexts. The latter is called regional engagement of entrepreneurs and has direct or indirect consequences for the competitiveness of the region.

In the following we discuss a number of conceptual issues that are relevant when exploring entrepreneurship in peripheral regions. We concentrate on specificities of entrepreneurship in the periphery and the usefulness of a relational perspective. We then discuss in more detail a conceptual approach regarding the differentiation between the above mentioned types of firm relations. Specifically, we present two approaches that are rooted in relational economic geography – namely the entrepreneurial heritage and the embeddedness approach – which may allow for a more sophisticated understanding of entrepreneurial dynamics in the periphery. We argue why these are specifically important for firms and entrepreneurs in peripheral areas, and why it makes sense to discuss them together. With this enlarged perspective, we aim to give a conceptual framework for empirical research explaining the presence of successful entrepreneurial firms in, and differences between peripheral areas. The conceptual framework also encompasses a typology of four kinds of regional peripheral

economies based on different characteristics concerning their entrepreneurial heritage and spatial embeddedness. On the basis of this typology we deducted some general policy recommendations. The final section summarizes the conceptual arguments, discusses possible contributions to relational economic geography and implications for further research.

2 Entrepreneurship in the periphery

When discussing entrepreneurship in the periphery, Lagendijk and Lorentzen's (2007) definition of peripheries as regional economies located outside of metropolitan areas is useful. The distance, respectively the proximity of a firm's location to core regions is generally seen as one important distinguishing feature. Besides the purely spatial, Torre and Gilly (2000) also emphasize the importance of organizational proximity of firms. Taking a rather structural approach, the term geographical proximity is based on spatial distance, and the social processes modifying natural constraints on mobility. On the other hand, "interaction between actors and the modalities of co-ordination" (Torre & Gilly, 2000, p. 174) are the determining factors for identifying organizational proximity between actors. It is important to emphasize the high heterogeneity of firms in peripheral areas: While some firms might be highly competitive and indeed organizationally proximate to firms in core regions, the majority of firms in peripheral regions are much less competitive and thus organizationally distant from firms in core regions. Consequently, these two types of peripheral firms are organizationally distant from each other, even though they might be geographically quite proximate. The analysis of the composition of a regional firm population will thus not only reveal the differences to firm populations of core areas, but also heterogeneities between different peripheral firm populations.

In this sense, the varying degree of interaction and co-ordination both within a regional economy and within larger, often global networks can be seen as a pivotal element for the disparities in innovativeness between regional firm populations, and for categorizing regional economies as central or peripheral. Consequently, a regional economy can be geographically proximate, but organizationally distant from core regions. Thus, reducing the definition of peripherality to spatiotemporal distance would not live up to the ordering principles of the modern globalized knowledge economy, characterized by fragmented economic spaces and an ongoing concentration of wealth and power in increasingly interconnected core regions (Anderson, 2000). The peripherality of non-metropolitan areas is also due to their limited capacity to connect to these networks of globalized economic places, or because of their lower hierarchical position within these networks (Lagendijk & Lorentzen, 2007). The peripherality of a certain regional economy not only concerns economic aspects, but also aspects of institutional decision-making processes as the decision-makers are often located in core regions at different levels (national, supranational).

Often defined as the opposite of urban areas, the periphery is generally considered to be "cast in a residual role" (Ward & Brown, 2009, p. 1238). Because of low production costs, especially cheap land and the availability of unskilled labor, the only significant industrial activity presumed in peripheral regions are branch plants from large companies of mature industries, whose headquarters and innovation activities are located in the core (Boschma & Lambooy, 1999). The innovativeness of firms is often related to the endogenous development potential of regional economies, and it is common to ascribe a lack of innovativeness and technological dynamism to peripheral regions (Copus, Skuras, & Tsegenidi, 2008). A frequently used framework to explore the innovativeness of regional economies is the Regional Innovation Systems (RIS) approach, which is also applied in the context of

peripheral regions. The most common deficiencies of RIS in peripheral regions are subsumed under the terms 'organizational thinness' and 'institutional thinness', which are characterized by four main properties: First, the predominance of small and medium sized enterprises and branch plants active in mature industries, which in turn have minor R&D activities and a poorly qualified workforce. As a result this limits the absorptive capacity of local firms and reduces the possibility of achieving radical innovations. Second, the relatively small population of firms is often not sufficient to initiate a self-reinforcing clustering process and to generate significant agglomeration economies. Third, important support organizations, like universities and specialized services, but also formal and informal institutions are absent or weakly developed. And fourth, firms show a lower degree of network connectedness, which reduces the possibility of knowledge diffusion (Isaksen, 2015; Tödtling & Trippl, 2005).

Notwithstanding, peripheral regions show a high diversity of development patterns (OECD, 2006). As a matter of fact, very entrepreneurial and innovative firms, and even global market leaders, can be found in peripheral regions (Simon, 2009). Examples of globally competitive industries in peripheral regions are, among others, the watch-making industry in the Swiss Jura Arc (Maillat, Lecoq, Nemeti, & Pfister, 1995), the ICT industry in the Oulu region, Finland (Virkkala, 2007) and the metallurgical complex in Lister, Norway (Isaksen, 2015). Thus, more attention should be paid to differences between peripheral regions (Meccheri & Pelloni, 2006), more precisely to different types of firms and different types of regional engagement within these heterogeneous peripheral areas.

The relational perspective seems to offer great potential to explain differences in performance between peripheral regions. On the one hand, relational perspectives are increasingly applied to explore knowledge acquisition strategies of firms. Since "firms act in relational spaces rather than anonymous market spaces" (Schutjens & Stam, 2003, p. 115), it is not sufficient to simply discuss the aggregated specificities of a regional economy. On the other hand, networks can be understood as an important basis for collective action. By this, economic actors can shape regional economies more effectively.

Firms are embedded in various types of networks, with different repercussions on their economic performance. We broadly distinguish two different categories of economic relations: first, economic relations in a strict sense, consisting of relations between firms with the function of acquiring relevant business knowledge; and second, economic relations in a wider sense, consisting of relations of entrepreneurs with the function of shaping regional e.g. institutional or organizational contexts. While they describe very different entrepreneurial activities, they both have important repercussion for a firm's competitiveness. Even more, they are especially important for firms located in peripheral areas: Because of the specificities of peripheral locations, firms are challenged to acquire external knowledge and collectively advocate for a better economic framework. Thus, engaging in the two types of networks is crucial for entrepreneurial firms in peripheral areas to remain competitive. Further, we assume that the capacity to successfully connect to and act within both types of networks is based on a rather similar set of competences. Firms that are better integrated in knowledge networks are supposedly also more active in engagement networks that help shape regional contexts. Due to this co-evolution of knowledge networks and engagement networks, economic relations in a strict and a wider sense have to be studied together.

Since the regional economies of peripheral areas are characterized by a number of deficiencies concerning local knowledge spillovers, respectively 'local buzz' (Grillitsch & Nilsson, 2015), firms especially rely on external relations, so-called 'global pipelines' (Bathelt, Malmberg, & Maskell, 2004). A high outbound connectedness for firms located in

the periphery is vital to acquire relevant information on market dynamics and to assure that the decision-makers in the core are sensitized concerning the economically challenging contexts in peripheral regions. Empirical research conducted in several countries shows that firms in peripheral areas compensate organizational thinness and limited knowledge spillovers by strengthening their extra-regional relations and by connecting to extra-regional knowledge sources (Doloreux, 2003; Rodríguez-Pose & Fitjar, 2013). However the capabilities to do so strongly differ between firms, depending on their absorptive capacity, local knowledge diffusion mechanisms (Cabiddu & Pettinao, 2013; Grillitsch & Nilsson, 2015) and their spatial embeddedness (Oinas, 1997), i.e. the spatial distribution of their social capital.

Moreover peripheral regions are characterized by stronger informal networks (Atterton 2007). Such informal networks can act as a source of support and knowledge compensating the absence of more formal information sources. When doing business in peripheral areas, face-to-face contacts seem to be crucial (Atterton, 2007). Such dense social networks can lead to a higher level of trust and a reduced risk of opportunistic behavior, thus increasing the propensity for, and quality of knowledge exchange (Grillitsch & Nilsson, 2015) and reducing the risks related to entrepreneurial actions (Westlund & Bolton, 2003). Also, these dense networks can engender an increased sensitivity for common regional interests and a more efficient interest articulation vis-à-vis various institutions or other regional actor groups.

Social relations that are too strong and high levels of reciprocal control can also hamper entrepreneurial initiatives (Grabher, 1993) and lead to so-called over-embeddedness (Uzzi, 1996). Atterton (2007) e.g. examines the different degrees of strength of ties between business owners by analyzing three towns in the highly peripheral Highlands and Islands of Scotland situated at different distances from the region's main market center Inverness. She found that there are differences between the three towns she had explored concerning e.g. the strength of the ties. She also points out that networks that are too strong constitute the risk of over-embeddedness and therefore lock-in. In this context it is important to distinguish between strong and weak ties (Granovetter, 1973) or as Putnam (2000) calls it, bonding and bridging social capital. Granovetter (1973, p. 1378) argues that weak ties are "indispensable to individuals' opportunities". They are therefore of utmost interest in the context of peripheral regions as they can balance the risk of over-embeddedness in strong ties. Weak ties might explain differences between peripheral economies, as they seem to be indispensable for firms to be competitive.

Three stylized facts can be summarized from the review so far: First, as peripheral regions are generally seen as a residual category, examining differences in entrepreneurial agency between peripheral regions has not been of interest to scholars and thus we do not have sufficiently developed answers to questions regarding these differences. Second, the existing literature on relational aspects in peripheral regions gives some indications that extra-regional networks can compensate possible local disadvantages. Consequently, extra-regional sources of knowledge play a crucial role in successful peripheral development. Third peripheral regions may possess rich social capital. High levels of social capital can be seen as the basis for an effective collaboration and organization of common regional interests, an aspect that is still barely investigated in entrepreneurship studies dealing with peripheral regions. Not only strong, but also weak ties should be taken into consideration as they could be decisive in explaining differences in competitiveness.

3 Relational perspectives on entrepreneurship in the periphery

3.1 Entrepreneurial heritage

In order to understand and evaluate the heterogeneity of entrepreneurship in peripheral areas, the concept of regional entrepreneurial heritage might prove particularly useful. It assumes that a regional firm population shares a certain set of firm routines[2]. Since external sources of knowledge are crucial for firms in peripheral areas, it is especially important to understand which routines for identifying and acquiring relevant new business knowledge (i.e., absorptive capacity routines, such as firm-internal R&D procedures or strategies for inter-firm communication and cooperation) firms have learned. We further assume that regional entrepreneurial heritage subsequently emerges through inheritance (that is, the transfer of firm routines from a parent firm to its spinoffs) of specific absorptive capacity routines among regional firms, as well as through regional diffusion of these via distinct knowledge exchange channels. Yet, not all local firms will profit in the same way from the diffusion of entrepreneurial heritage. This stands in contrast to basic agglomeration externalities or knowledge spillover concepts, where all firms of a regional economy are supposed to profit from externalities. Rather, differences in absorptive capacity and entrepreneurial agency will be highly accentuated, depending on the firm's history and connectedness. This argumentation is consistent with the heritage theory (Buenstorf & Klepper, 2009), claiming that scale effects and agglomeration externalities are not a prerequisite for the clustering of an industry (Klepper, 2010). Rather, firms with superior routines constitute a particularly fruitful learning environment for entrepreneurs, and spinoffs from these companies are supposed to show a higher chance of survival compared to spinoffs from less successful parent firms or simple startups (Dahl & Sorenson, 2013). The fact that spinoffs predominantly locate near their parent firms will ultimately lead to a gradual inheritance and spatial clustering of successful routines within a regional economy. The term regional entrepreneurial heritage stands for this geographically confined accumulation of successful routines.

However, the empirical application of this heritage theory to peripheral areas has been very sparse so far. Only a few studies qualitatively analyzed exceptional spinoff processes from firms located in peripheral areas (Benneworth, 2004; Mayer, 2011). This is surprising because the theoretical assumption of the heritage theory – that agglomeration externalities are not a prerequisite for the clustering of successful firms – makes it well suited for being applied to a peripheral context. Consensus is growing, that both organizational inheritance and agglomeration economies give firms a competitive advantage and complementarily contribute to the clustering of an industry. Yet, their relative importance varies depending on the examined industry, its stage in the industry life cycle, and pre-entry experiences of new ventures (Frenken, Cefis, & Stam, 2015). This could constitute a specifically interesting field of research, since agglomeration externalities are assumed to be much less significant or even nonexistent in peripheral regions. It would therefore be possible to focus on inheritance mechanisms without a strong influence of agglomeration externalities. However, empirical evidence if and how routine inheritance occurs and how regional entrepreneurial heritage is subsequently built up in peripheral regions is still lacking.

In order to apply the heritage theory to the context of firm population dynamics in the periphery, we need to specify the theory in two aspects: First, we narrow the term routine down to absorptive capacity routines. Absorptive capacity, defined as "a set of organizational

[2] A firm routine can be defined as "an executable *capability* for repeated performance in some *context* that [has] been *learned* by an organization in response to *selective pressures*" (M. D. Cohen et al., 1996, p. 683).

routines and processes by which firms acquire, assimilate, transform, and exploit knowledge" (Zahra & George, 2002, p. 186), can be understood as a specific subset of firm routines. The concept is inherently evolutionary, as prior knowledge and capabilities determine the absorptive capacity of a firm, more specifically, its readiness to identify and invest in critical new knowledge (W. M. Cohen & Levinthal, 1990). Consequently, the initial conditions under which a firm is founded strongly influences its subsequent development path. Thus, we can assume, that the heritage approach, describing routine inheritance more generally, is also relevant for the more specific case of absorptive capacity: Spinoffs would therefore (at least partly) inherit the absorptive capacities of their parent organizations, which would lead to competitive spinoffs from performant parents.

Second, we add routine imitation as another possible process for diffusing absorptive capacity routines within a regional economy. So far, the heritage approach has been focusing on routine inheritance by the creation of new firms, that is, spinoff processes. However, routines, respectively absorptive capacities, are theoretically also diffusible via imitation (Hodgson & Knudsen, 2004). But because of its complexity, the imitation of absorptive capacities is very difficult to perform and is supposed to occur more indirectly through knowledge exchange. From a firm population perspective, the absorptive capacity quality of firms, the similarity of absorptive capacities between exchanging firms and the quality of knowledge network relations determines to what extent firms can learn from each other (Giuliani, 2005). If interactive learning takes place, the enlargement of the knowledge base of the respective firm will consequently have repercussions on its absorptive capacity. Thus, a self-reinforcing, path-dependent process comes into play, where firms with performant absorptive capacities are likely better connected to other firms, which leads to increased learning, which in turn leads to specific modifications of the firms' absorptive capacities (W. M. Cohen & Levinthal, 1990). Thus, firms might imitate the absorptive capacities of other firms only to a lesser extent by directly copying it, but depending on what knowledge they acquire through interactive learning. As an example, one could imagine an R&D cooperation between two firms, where the first firm learns of a new promising technology used by the second firm. Without knowing the specificities of this technology, the first firm is now sensitized for the possible benefits of it, and might allocate new investments in order to master it. Thus the first firm modified its absorptive capacity by acquiring new knowledge through inter-firm knowledge exchange. Ultimately, the first firm might add new routines to its existing repertoire, as it masters the new technology. It will then dispose of similar routines, based on the new technology, as the second firm. Hence, routine diffusion is not only possible through routine inheritance, but also through routine imitation based on knowledge exchange.

In the case of firms in peripheral areas, the specified heritage theory might prove particularly useful to analyze their survival performance. As argued before, these firms can rely to a lesser extent on the local knowledge pool and profit less from informal, 'random' knowledge spillovers and local agglomeration effects. Thus, they have to rely on their own competencies, on formal relations to extra-regional business partners, and show entrepreneurial agency in order to usefully enlarge their knowledge base. The absorptive capacity then determines how performant firms are in building up these internal competences and firm-external knowledge networks. Evolutionary theory suggests that routines are quite inert to change (Dencker, Gruber, & Shah, 2009), and the heritage theory only addresses routine inheritance via spinoffs as mechanism of routine diffusion. Yet, considering the fundamental changes of the economic landscape of the past twenty to thirty years, globally active firms in peripheral areas must have for sure modified their absorptive capacities. It has to be assumed that these firms show entrepreneurial initiative (Cabiddu & Pettinao, 2013) and actively adapt to the changing macroeconomic environment. Considering the lower level of firm formation in peripheral

areas, absorptive capacity routines have probably been diffused not only by spinoff processes, but to a certain extent also via imitation. From a firm-centered perspective, the intriguing question is to what extent do firms stick to old routines or apply new ones, and from where they get the routines they inherit or imitate. From a local firm population perspective, the question arises to what extent are different exchange mechanisms in peripheral areas relevant for the diffusion of specific routines, respectively absorptive capacities.

In practice, a few entrepreneurial firms located in peripheral areas may have been able to build up strong absorptive capacities and far reaching knowledge networks, which make them to a large extent independent from local knowledge exchange. Subsequent investments in knowledge generation and acquisition as well as entrepreneurial discovery will continuously strengthen their absorptive capacities. Nonetheless, these companies might have some business partners in the region with whom knowledge exchange is rational. Trustful and stable relationships might have been built up, as for example in the case of long term strategic alliances, close buyer-supplier relationships, or interlocking directorates (Carpenter & Westphal, 2001; Westphal, Seidel, & Stewart, 2001). Alternatively, senior employees with detailed insights of the company's functioning might move from one firm to the other (Frenken & Boschma, 2007). Also, 'technological gatekeepers' (Giuliani, 2005) might play an accentuated role by acquiring external knowledge, facilitating knowledge exchange and building up local capacity in the peripheral context. The dense social relations and high levels of trust among economic actors in peripheral areas might lead to a more pronounced exchange of knowledge und consequently to a more frequent imitation of locally present absorptive capacity routines. With this continuous knowledge exchange, the less competitive firms can make use of the newly acquired knowledge to adapt their absorptive capacities. We can thus speak of the evolution of a specific regional entrepreneurial heritage in peripheral areas. By the processes of inheritance and imitation, specific absorptive capacities are not only a characteristic of a single firm, but to a certain extent also a shared attribute of a regional firm population (Cabiddu & Pettinao, 2013).

3.2 Embeddedness

The economically challenging conditions in peripheral regions incentivize firms not only to rely on economic or knowledge networks but also to participate in so-called engagement networks. Successful regional engagement however, requires entrepreneurial firms to be spatially well embedded.

The embeddedness approach highlights firms' "external relations in specific contexts" (Oinas, 1997, p. 30). Those external relations "may affect the competitiveness of firms and the development of regions" (Oinas, 1997, p. 30). Hence the embeddedness aproach is a promising concept to learn more about the reasons for heterogenous economic development in peripheral regions. Previous studies have shown that embeddedness indeed varies between peripheral areas (Atterton, 2007; Pileček, Chromý, & Jančák, 2013). When examining peripheral regions, it is crucial to take into consideration not only the embeddedness of firms at a regional level, but also at an extra-regional level, which has often been neglected in embeddedness research (Hess, 2004). Spatial embeddedness (see Oinas, 1997) however highlights the entrepreneurs' social networks covering different spatial levels. This is especially important concerning regional engagement in peripheral regions, as a good mix of regional networks to other actors such as other entrepreneurs or the municipal authorities e.g. and extra-regional networks to decision-makers who are often located in core regions, may be advantageous to firms in the periphery.

Granovetter (1990, p. 98) underlines the potential of actors to shape their environment by defining embeddedness as follows: "By ‚Embeddedness' I mean that economic action, outcomes, and institutions are affected by actor's personal [dyadic] relations, and by the structure of the overall network of relations." That means that economic actors are embedded in specific contexts (see Welter, 2011) such as organizational or institutional contexts, which in turn can be shaped through engagement networks. Examples of such networks are networks formed for collective action within regional business associations or the networks resulting from the entrepreneur's membership in a political party, but also informal networks between entrepreneurs who meet to engage for common regional interests.

So far, many studies on embeddedness in entrepreneurship have focused on knowledge and information networks mostly concerning business or innovation issues (Johannisson, Ramirez-Pasillas, & Karlsson, 2002; Uzzi, 1996), not however on networks for regional engagement. Regional engagement in the sense of entrepreneurs who actively shape the contexts they are involved in (see Lengauer & Tödtling, 2010) depends on those networks at different spatial scales (spatial embeddedness). Moreover, the characteristics and the effectiveness of engagement networks differ between peripheral regions. In this sense entrepreneurial actors in peripheral regions can actively shape and modify the contexts they are embedded in and therefore influence the development of peripheral regions. Welter (2011) distinguishes between business (industry), spatial (business support infrastructure), social (networks) and institutional (legal and regulatory regulations) contexts. In peripheral regions certain contexts such as the institutional, but also the organizational contexts are of particular interest, as by shaping them, entrepreneurs may possibly reduce the organizational and institutional thinness[3] of their region.

As a result, we note that not only knowledge networks for business purposes in the strict sense are worth examining, but also networks with the aim of shaping regional contexts. By taking such a perspective, studies of entrepreneurship in peripheral regions may cover a broader spectrum of relations, which in turn may have explanatory capacity concering differences in terms of entrepreneurial dynamics between peripheral regions.

Lengauer and Tödtling (2010, p. 2) examined regional engagement in the sense of corporate regional engagement, which they define as "the active involvement of companies in shaping and upgrading regional productive potentials." That means that entrepreneurs actively shape "the contexts and networks a firm is involved in" (Lengauer & Tödtling, 2010, p. 7). In their study of corporate regional engagement, Lengauer and Tödtling (2010) do not focus on the networks this engagement is based on, but rather on the motivation for and the degree of corporate regional engagement by comparing three different industries in the Austrian region of Styria. Moreover they focus on different activities the regions benefit from, such as human resource development and training or philantropic activities (Lengauer & Tödtling, 2010). Yet, they do not explicitly take into consideration the engagement of firms to shape institutional issues such as laws or regulations which however also influence regional economies. Hence it makes sense to consider different contexts entrepreneurs shape through

[3] Trippl et al. (2015, p. 5) define organizational thickness (thinness) as "the presence (absence) of a critical mass of firms, universities, research bodies, support organizations, unions, associations, and so on." Institutional thickness (thinness) refers to "the presence (absence) of both formal institutions (laws, rules, regulations) and informal institutions such as innovation and cooperation culture, norms and values that promote collective learning and knowledge exchange" (Trippl et al., 2015, p. 5).

regional engagement, such as organizational, social or spatial contexts e.g., but also institutional contexts (see Welter, 2011). Regarding the conceptual approach we develop in this paper, regional engagement includes all kinds of activities and networks shaping regional contexts, which have direct or indirect economic effects and are therefore eventually business oriented.

When engaging for the region, networks of different scales and actors are indespensible for entrepreneurs. To shape institutional contexts extra-regional relations are particularly crucial as decision-makers are often located in the core. To shape organizational contexts, the willingness of firms to collaborate regionally is of utmost importance. Hence collective action by several entrepreneurs, but also together with actors of other interest groups (such as the municipal authorities or tourism) at a regional level is significant and seems to have an important influence on regional development (Engstrand & Sätre Åhlander, 2008).

Focusing on regional engagement of entrepreneurs in peripheral regions and their spatial embeddedness is important for several reasons: First, according to Baumgartner et al. (2013) one typical characteristic of entrepreneurship in European peripheral regions is that it "aims to create added values locally" (Baumgartner et al., 2013, p. 18). That means that entrepreneurs in peripheral areas show a strong willingness to engage on behalf of the regional economy (Baumgartner et al., 2013). This engagement may however differ between peripheral regions. Such differences in regional engagement may help explain different development dynamics. Second, regional engagement benefits from the rich social capital[4] that can be found in peripheral regions. As mentioned earlier, actors in peripheral regions possess strong, especially informal relations that are based on high levels of trust (Atterton, 2007). That means that entrepreneurial actors in peripheral regions know each other and it is easy for them to have face-to-face contact. Due to the small population size that is typical for peripheral regions, actors can meet quickly, often without passing through official channels and they may develop a capacity to react to issues in flexible and effective ways. Although dense social networks can help entrepreneurial actors in peripheral regions to act quickly and to collaborate efficiently to foster regional economies, it is essential that they not only develop strong ties (bonding social capital) but also weak ties (bridging social capital) to other regional actors. To engage regionally, different regional actors have to be willing to collaborate. The quality of collaboration is very important, especially for entrepreneurship in peripheral regions (Pato & Teixeira, 2014). If there is a lack of reciprocity or collaboration between firms and other regional stakeholders, they risk to negatively influence long-term regional economies. Moreover entrepreneurial actors should dispose of extra-regional ties (linking social capital), as decision-makers are often located in core regions. This is especially important when entrepreneurs try to shape institutional contexts such as laws or regulations. Hence regional and extra-regional networks are important at the same time. If there is a lack of extra-regional or weak ties or the willingness to collaborate, peripheral regions may be in danger of lock-in situations. Therefore, both a combination of strong ties (bonding social capital) and weak ties (bridging social capital) connecting the firms with regional and extra-regional networks (linking social capital) are important. In addition, collaboration between and among different regional actors is another prerequisite for regional engagement to be successful.

[4] Social capital can be defined as consisting of "social networks/relations and the norms and values that are generated, accumulated and disseminated through these networks" (Westlund & Gawell, 2012, p. 104).

Engagement networks very often include the participation not only of several entrepreneurial actors, but also of several agents from different sectors of society. Hence the concept of cross-sectoral social capital, which highlights the importance of a collective of actors (Westlund & Gawell, 2012) is suitable to examine those networks. Engagement networks aimed at shaping regional contexts rest upon the participation of several actors, thus bonding, bridging and linking social capital is needed (Westlund & Gawell, 2012) and these different types of social capital become effective at different spatial scales. As already mentioned, bonding social capital is very important in the context of peripheral regions. To engage for common regional interests, bonding social capital at the regional level, e.g. in the form of business organizations or informal networks between entrepreneurs, is important. But also the so-called weak ties or the bridging social capital at the regional level are indispensable, consisting of relations to other important regional stakeholders such as the public authorities, especially when engaging for the region. Linking social capital however involves actors at a higher administrative hierarchical level, who are crucial when shaping e.g. institutional contexts such as laws or regulations. Since these administrative hierarchical levels are almost exclusively located in core regions, linking social capital of peripheral entrepreneurs is practically always related to extra-regional ties.

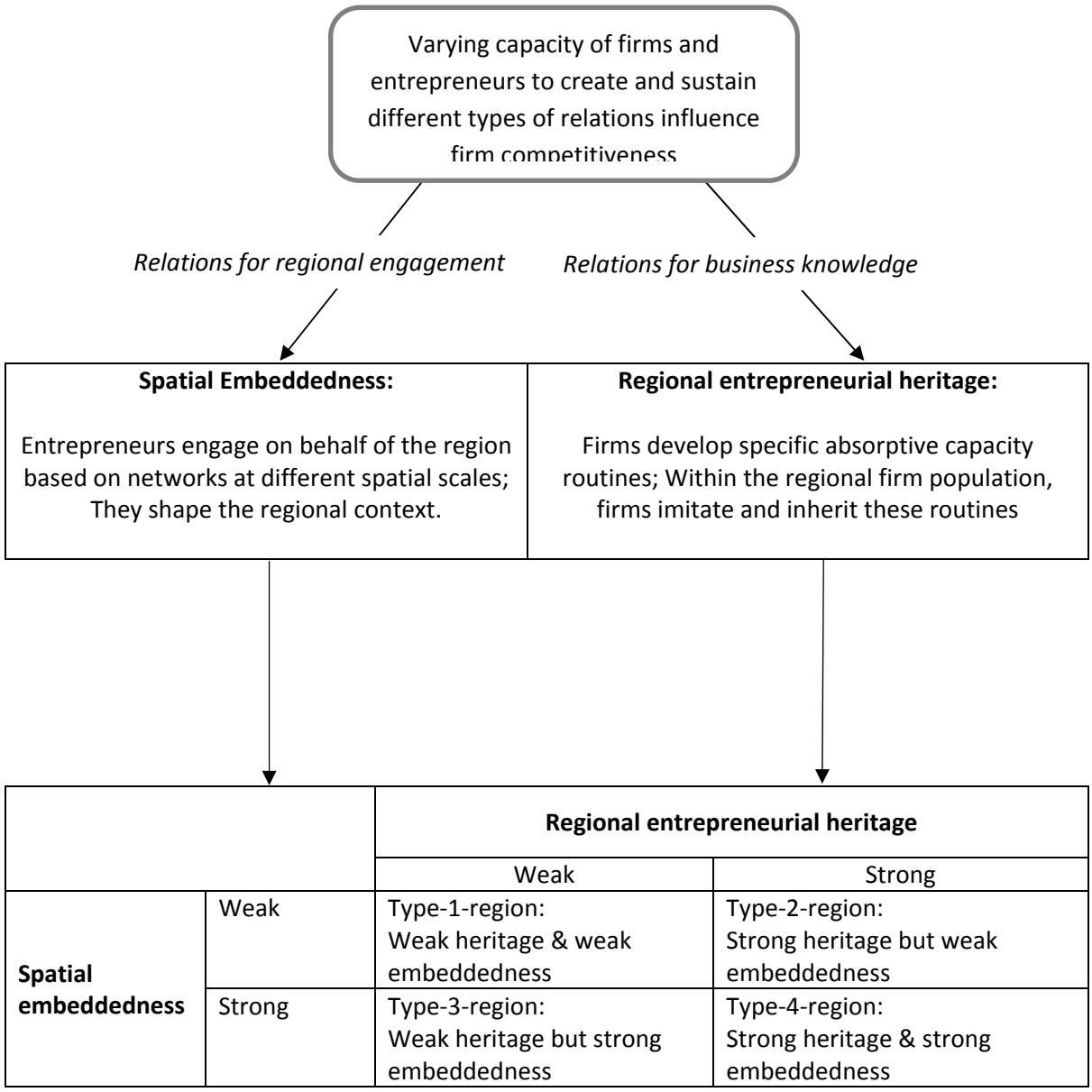
Therefore highly competitive peripheral regions may show well developed regional engagement of entrepreneurs based on high social capital and the ability of the entrepreneurs to organize and collaborate at a regional level, involving bonding and bridging social capital. Additionally, linking social capital at the extra-regional scale is well developed. In contrast, economically less competitive peripheral regions may be characterized by too many strong and local links or a weakly developed willingness to collaborate, i.e. they face the risk of so-called overembeddedness (Uzzi, 1996) which may result in lock-in (Atterton, 2007). That also means that they do not have enough extra-regional linking social capital connecting them to important decision-makers at different hierarchical levels when institutional contexts are to be shaped. Thanks to regional engagement, entrepreneurial actors can influence e.g. aspects of organizational (e.g. universities, associations) and institutional thinness (e.g. laws, rules, cooperation culture) to a certain degree. Following such a perspective may explain why peripheral regions differ.

3.3 Conceptual framework and possible policy implications

Based on the preceeding conceptual discussion, we propose to examine the two presented approaches in a combined way, as both types are potentially relevant when it comes to the competitiveness of firms in peripheral areas. More specifically, the competitiveness depends on their capacity to construct and sustain both, relations for regional engagement and for business knowledge acquisition. As we outline above, we suggest to employ the heritage approach to investigate business knowledge networks, respectively the embeddedness perspective to examine engagement networks. By differentiating the quality of these knowledge and engagement networks, we deduct a typology of four types of peripheral regional economies (see Figure 1). We further specify these types of peripheral economies by describing several relevant aspects related to the embeddedness and heritage perspectives and compare them to an archetypical core economy (see Table 1).

Region-type/ Characteristics	**Type-1-region: Weak heritage & weak embeddedness**	**Type-2-region: Strong heritage but weak embeddedness**	**Type-3-region: Weak heritage but strong embeddedness**	**Type-4-region: Strong heritage & strong embeddedness**	**Core regions**
Regional routine inheritance dynamics	Startup activities from experienced entrepreneurs and spinoff-dynamics are rare	Average startup activities from experienced entrepreneurs and spinoff-dynamics	Startup activities from experienced entrepreneurs and spinoff-dynamics are rare	Average startup activities from experienced entrepreneurs and spinoff-dynamics	High and self-reinforcing spinoff dynamics lead to a stronger diffusion of successful routines
Regional Routine imitation dynamics	Few economic links between regional firms lead to very limited knowledge exchange and routine imitation	Firms with strong routines collaborate with selected regional firms; limited routine imitation dynamics	Few economic links between regional firms lead to very limited knowledge exchange and routine imitation	Firms with strong routines collaborate with selected regional firms; limited routine imitation dynamics	Many firms with strong routines and intensive knowledge exchange lead to high routine imitation dynamics
Absorptive capacity routines and knowledge networks	A small minority of firms dispose of successful routines and strong knowledge networks; these are hardly dependent on the regional firm population	Some firms dispose of successful routines and knowledge networks; a limited number of firms share a strong regional entrepreneurial heritage	A small minority of firms dispose of successful routines and strong knowledge networks; these are hardly dependent on the regional firm population	Some firms dispose of successful routines and knowledge networks; a limited number of firms share a strong regional entrepreneurial heritage	High competition and strong knowledge exchange lead to the diffusion and selection of the fittest routines
Value creation for the region	Entrepreneurial actors only engage weakly for the region	Entrepreneurial actors only engage weakly for the region	Entrepreneurial actors engage strongly for the region	Entrepreneurial actors engage strongly for the region	Entrepreneurial actors do not especially engage for the region, as the contexts in core regions are already favorable
Bonding and bridging social capital and degree of collaboration	Too much bonding social capital of entrepreneurial actors involves the risk of lock-in; they dispose of only weak bridging social capital and a weak willingness to collaborate	Too much bonding social capital of entrepreneurial actors involves the risk of lock-in; they dispose of only weak bridging social capital and a weak willingness to collaborate	Entrepreneurial actors dispose of a good mix of bonding and bridging social capital and a strong willingness to collaborate	Entrepreneurial actors dispose of a good mix of bonding and bridging social capital and a strong willingness to collaborate	Entrepreneurial actors dispose of high bonding and bridging social capital, but not focused on regional engagement, but on business collaboration
Linking social capital	Entrepreneurial actors lack extra-regional relations (linking social capital) to decision-makers in the core	Entrepreneurial actors lack extra-regional relations (linking social capital) to decision-makers in the core	Entrepreneurial actors dispose of a good mix of regional and extra-regional (linking social capital) relations	Entrepreneurial actors dispose of a good mix of regional and extra-regional (linking social capital) relations	Entrepreneurial actors dispose of higher linking social capital and this at all spatial scales

Table 1: Key heritage and embeddedness characteristics of the different types of peripheral regions



		Regional entrepreneurial heritage	
		Weak	Strong
Spatial embeddedness	Weak	Type-1-region: Weak heritage & weak embeddedness	Type-2-region: Strong heritage but weak embeddedness
	Strong	Type-3-region: Weak heritage but strong embeddedness	Type-4-region: Strong heritage & strong embeddedness

Figure 1: Conceptual framework for a relational perspective on entrepreneurship in the periphery

Type-1-regions are those regional economies that many scholars would identify as typically peripheral. Indeed, they face the highest challenges, as entrepreneurial heritage and regional engagement is weakly developed. Regional firm populations might be characterized by traditional industrial sectors with low export and innovation rates. Moreover, due to limited regional engagment, organizational and institutional thinness persist.

Type-2-regions are characterized by a reasonable amount of competitive and well connected firms. Some firms benefit from regional routine inheritance or imitation. However, these firms may be only loosely anchored in the region and may not see the necessity for regional engagement. This might be the case for newly immigrated entrepreneurs or foreign-owned firms.

Type-3-regions are characterized by weaknesses concerning entrepreneurial heritage characteristics. Regional routine inheritance and imitation dynamics as well as knowledge networks and absorptive capacities of firms are restricted. This may be due to a firm population that is mainly active in mature industries and disposes of weakly performant

knowledge networks when it comes to creating innovations. On the other hand regional engagement is more pronounced. The entrepreneurs can rely on a good mixture of bonding, bridging and linking social capital, including extra-regional relations which may be due to a long industrial tradition and a well-established organizational framework in the region.

Type-4-regions host the most successful peripheral economies as both knowledge and engagement networks are well developed and efficient. The firms in these regions generally possess a high capacity to create and sustain those relevant networks, which help them compensate the economically challenging conditions in peripheral regions. However, they differ from core regions in two important respects: First, the limited size of the firm population hinders the take-off of a self-reinforcing clustering process. In this sense, firms in peripheral regions will still have to rely to a larger degree on external knowledge sources compared to firms in core regions. Second, as core regions are generally better positioned when it comes to shaping their regional economic contexts, firms and entrepreneurs from peripheral regions still have to advocate for better conditions on behalf of their regions.

In order to address these specific deficiencies of different peripheral regional economies, differentiated policy approaches are necessary. As Type-1-regions lack efficient knowledge and engagement networks, regional policy should primarily aim at identifying those actors that have the highest potential for strengthening knowledge networks – both regional and extra-regional – and building up regional engagement alliances. Since Type-2-regions show deficiencies concerning the firms' regional engagement, the well connected and competitive firms should be encouraged to use their network competencies on behalf of the regional contexts. This should be done by integrating other firms and regional actors, and by creating engagement networks at an extra-regional scale. Type-3-regions are marked by deficiencies concerning entrepreneurial heritage. Hence, firms' social capital for regional engagement could serve as a basis for fostering knowledge exchange at a regional and extra-regional level, as well. Finally, Type-4-regions are the most successful ones as both, knowledge networks and engagement networks are well developed. Therefore policy action should strengthen already well established and further promising business fields in order to surpass the critical mass for self-reinforcing cluster dynamics.

4 Conclusions

This paper showed that entrepreneurship in peripheral areas should be analyzed in more depth in order to identify and understand the heterogeneity of regional economic development in the periphery. It is important to note, that a modern definition of peripherality has to go beyond simple geographical distance, but has to take into account other forms of proximity, especially when it comes to the connectedness of regional economies, both at the local and the global level. As current entrepreneurship approaches cannot explain these heterogeneities between peripheral region adequately, we have to examine peripheral economies and their differences from another angle, especially when taking into account that also firms in the periphery are embedded in global production and distribution networks while at the same time being rooted in a peripheral context. Hence a relational firm-centered perspective should be employed, as it takes into account the situation peripheral areas are confronted with today. Based on relevant findings from previous literature we come to the following conclusions: As we argue above, entrepreneurial firms in peripheral regions can compensate lacking scale effects and institutional and organizational thinness. This can be done by fostering extra-regional relations and by engaging for the region combining bonding, bridging and linking ties. It is

thus necessary to better understand the network strategies of these firms and to explore, how the knowledge and engagement networks of these firms evolve over time. Employing a heritage perspective enables us to examine the dynamics of firm routines and absorptive capacity diffusion. Additionally, employing an embeddedness perspective has the advantage to investigate a different purpose of network relations with the aim of shaping regional contexts in the periphery.

We suggest combining the analysis of both, knowledge and engagement networks as we assume that the competencies necessary to engage in these networks are similar, and that both influence the competitiveness of firms. The combination of those two perspectives has therefore great explanatory potential concerning the economic heterogeneity of peripheral regions. Based on different qualities of knowledge and engagement networks, we developed a typology of four peripheral regional economies and deducted some basic policy recommendations. As policies tend to suggest 'one-size-fits-it-all' solutions (Tödtling & Trippl, 2005) for peripheral regions without taking into consideration their differences, more sophisticated and differentiated approaches to support the development efforts of these regions would be welcomed by theorists and practitioners alike.

With this combined approach we also intend to contribute to the discussions in relational economic geography, which "draws attention to the importance of economic agents and how they act and interact in space" (Bathelt & Glückler, 2003, p. 128). Firms can shape the regional economic context by building different types of networks. The context is thus not a preformed and unchangeable attribute of the regional economy, but an emergent property resulting from the specific regional actor constellation. Consequently, it is not primarily the region's characteristic as 'peripheral' that determines entrepreneurial agency, but the different ways entrepreneurial actors build relations and employ them to shape their environment. Since we see the context as an emergent property resulting from network dynamics, it is essential to take into consideration an evolutionary perspective. This enables the integration of distinct explanatory evolutionary concepts, such as path-dependence or contingency (Bathelt & Glückler, 2003). In this paper, we attempted to construct a conceptual framework that gives more attention to economic actors in peripheral regions, the way they integrate in different types of regional and extra-regional networks and how this might influence regional economic development.

Future empirical studies are necessary to verify this conceptual framework. Since the framework it is based on individual firms and entrepreneurs, detailed micro-scale data, which is not always available, is necessary. In order to get a good picture of both knowledge and engagement networks, there is a need to combine different data. These may include R&D-cooperation, joint patent pending, interlocking directorates and spinoff-parent relations when speaking of knowledge networks, or memberships in business organizations and political parties as well as political mandates held by entrepreneurs in the context of engagement networks, to name just a few. Beside the specific characteristics and functioning principles of both types of networks in different peripheral regions, analyzing the interplay and co-evolution of knowledge and engagement networks represents another intriguing avenue of research. Questions such as whether both types of networks are co-evolving or whether they are independent from each other are relevant. If they are indeed co-evolving, is one type of network more dependent on the other, i.e. is the evolution of one type of network a prerequisite for the development of the other type? Of course, many other interesting research questions are possible within this research field, which might give valuable insights on the different development patterns of peripheral regions.

Acknowledgement: The research for this paper was funded by the Swiss National Science Foundation (Grant 146436). The authors would like to thank Daniel Baumgartner, Elizabeth Mack and Haifeng Qian for their helpful comments and feedback.

5 Bibliography

Anderson, A. R. (2000). Paradox in the periphery: an entrepreneurial reconstruction? *Entrepreneurship & Regional Development*, *12*(2), 91–109.

Atterton, J. (2007). The "Strength of Weak Ties": Social Networking by Business Owners in the Highlands and Islands of Scotland. *Sociologia Ruralis*, *47*(3), 228–245.

Audretsch, D. B., Falck, O., Feldman, M. P., & Heblich, S. (2012). Local Entrepreneurship in Context. *Regional Studies*, *46*(3), 379–389.

Bathelt, H., & Glückler, J. (2003). Toward a relational economic geography. *Journal of Economic Geography*, *3*(2), 117–144.

Bathelt, H., Malmberg, A., & Maskell, P. (2004). Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation. *Progress in Human Geography*, *28*(1), 31–56.

Baumgartner, D., Pütz, M., & Seidl, I. (2013). What Kind of Entrepreneurship Drives Regional Development in European Non-core Regions? A Literature Review on Empirical Entrepreneurship Research. *European Planning Studies*, *21*(8), 1095–1127.

Benneworth, P. (2004). In what sense "regional development?": entrepreneurship, underdevelopment and strong tradition in the periphery. *Entrepreneurship & Regional Development*, *16*(6), 439–458.

Boschma, R., & Lambooy, J. G. (1999). Evolutionary economics and economic geography. *Journal of Evolutionary Economics*, *9*(4), 411–429.

Bosma, N., & Schutjens, V. (2011). Understanding regional variation in entrepreneurial activity and entrepreneurial attitude in Europe. *The Annals of Regional Science*, *47*(3), 711–742.

Buenstorf, G., & Klepper, S. (2009). Heritage and Agglomeration: The Akron Tyre Cluster Revisited. *The Economic Journal*, *119*(April), 705–733.

Cabiddu, F., & Pettinao, D. (2013). External Knowledge, Territorial Inertia and Local Development: An Explanatory Case Study. *European Planning Studies*, *21*(8), 1297–1316.

Carpenter, M. A., & Westphal, J. D. (2001). The Strategic Context of External Network Ties: Examining the Impact of Director Appointments on Board Involvment in Strategic Decision Making. *The Academy of Management Journal*, *44*(4), 639–660.

Cohen, M. D., Burkhard, R., Dosi, G., Egidi, M., Marengo, L., Warglien, M., & Winter, S. (1996). Routines and Other Recurring Action Patterns of Organizations: Contemporary Research Issues. *Industrial and Corporate Change*, *5*(3), 653–698.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, *35*(1), 128–152.

Copus, A., Skuras, D., & Tsegenidi, K. (2008). Innovation and Peripherality: An Empirical Comparative Study of SMEs in Six European Union Countries. *Economic Geography*, *84*(1), 51–82.

Dahl, M. S., & Sorenson, O. (2013). The who, why, and how of spinoffs. *Industrial and Corporate Change*, *23*(3), 661–688.

Dencker, J. C., Gruber, M., & Shah, S. K. (2009). Pre-Entry Knowledge, Learning, and the Survival of New Firms. *Organization Science*, *20*(3), 516–537.

Doloreux, D. (2003). Regional Innovation Systems in the Periphery: the Case of the Beauce in Québec (Canada). *International Journal of Innovation Management*, *7*(1), 67–94.

Engstrand, Å. K., & Sätre Åhlander, A. M. (2008). Collaboration for Local Economic Development: Business Networks, Politics and Universities in Two Swedish Cities.pdf. *European Planning Studies*, *16*(4), 487–505.

Freire-Gibb, L. C., & Nielsen, K. (2014). Entrepreneurship Within Urban and Rural Areas: Creative People and Social Networks. *Regional Studies*, *48*(1), 139–153.

Frenken, K., & Boschma, R. (2007). A theoretical framework for evolutionary economic geography: industrial dynamics and urban growth as a branching process. *Journal of Economic Geography*, *7*(5), 635–649.

Frenken, K., Cefis, E., & Stam, E. (2015). Industrial Dynamics and Clusters: A Survey. *Regional Studies*, *49*(1), 10–27.

Giuliani, E. (2005). Cluster Absorptive Capacity: Why do some Clusters Forge Ahead and other Lag Behind? *European Urban and Regional Studies*, *12*(3), 269–288.

Grabher, G. (1993). The weakness of strong ties. The lock-in of regional development in the Ruhr area. In G. Grabher (Ed.), *The Embedded Firm* (pp. 255–277). London: Routledge.

Granovetter, M. (1973). The Strength of Weak Ties. *American Journal of Sociology*, *78*(6), 1360–1380.

Granovetter, M. (1990). The old and new economic sociology: A history and an agenda. In R. Friedland & A. Robertson (Eds.), *Beyond the Market Place: Rethinking Economy and Society* (pp. 89–112). New York: Aldine de Gruyter.

Grillitsch, M., & Nilsson, M. (2015). Innovation in pheripheral regions: Do collaboratins compensate for a lack of local knowledge spillovers? *The Annals of Regional Science*, *54*, 299–321.

Hess, M. (2004). "Spatial" relationships? Towards a reconceptualization of embeddedness. *Progress in Human Geography*, *28*(2), 165–186.

Hodgson, G. M., & Knudsen, T. (2004). The firm as an interactor: firms as vehicles for habits and routines. *Journal of Evolutionary Economics*, *14*(3), 281–307.

Isaksen, A. (2015). Industrial development in thin regions: trapped in path extension? *Journal of Economic Geography*.

Johannisson, B., Ramirez-Pasillas, M., & Karlsson, G. (2002). The institutional embeddedness of local inter-firm networks: a leverage for business creation. *Entrepreneurship & Regional Development*, *14*(4), 297–315.

Klepper, S. (2010). The origin and growth of industry clusters: The making of Silicon Valley and Detroit. *Journal of Urban Economics*, *67*(1), 15–32.

Lagendijk, A., & Lorentzen, A. (2007). Proximity, Knowledge and Innovation in Peripheral Regions. On the Intersection between Geographical and Organizational Proximity. *European Planning Studies*, *15*(4), 457–466.

Lengauer, L., & Tödtling, F. (2010). Regional Embeddedness and Corporate Regional Engagement: Evidence from three industries in the Austrian region of Styria. In *Conference paper for the 8th European Urban & Regional Studies Conference* (pp. 1–31).

Maillat, D., Lecoq, B., Nemeti, F., & Pfister, M. (1995). Technology District and Innovation: The Case of the Swiss Jura Arc. *Regional Studies*, *29*(3), 251–263.

Malecki, E. (1994). Entrepreneurship in Regional and Local Development. *International Regional Science Review*, *16*(1-2), 119–153.

Mayer, H. (2011). *Entrepreneurship and Innovation in Second Tier Regions*. Cheltenham: Edward Elgar.

Meccheri, N., & Pelloni, G. (2006). Rural entrepreneurs and institutional assistance: an empirical study from mountainous Italy. *Entrepreneurship & Regional Development*, *18*(5), 371–392.

Metcalfe, S. (2004). The entrepreneur and the style of modern economics. *Journal of Evolutionary Economics*, *14*(2), 157–175.

OECD. (2006). *The New Rural Paradigm: Policies and Governance*. Paris: OECD Publishing.

Oinas, P. (1997). On the Socio-Spatial Embeddedness of Business Firms. *Erdkunde*, *51*(1), 23–32.

Pato, M. L., & Teixeira, A. (2014). Twenty Years of Rural Entrepreneurship: A Bibliometric Survey. *Sociologia Ruralis*, 1–26.

Pileček, J., Chromý, P., & Jančák, V. (2013). Social Capital and Local Socio-economic Development: The Case of Czech Peripheries. *Tijdschrift Voor Economische En Sociale Geografie*, *104*(5), 604–620.

Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York, NY: Simon & Schuster.

Rodríguez-Pose, A., & Fitjar, R. D. (2013). Buzz, Archipelago Economies and the Future of Intermediate and Peripheral Areas in a Spiky World. *European Planning Studies*, *21*(3), 355–372.

Schutjens, V., & Stam, E. (2003). The Evolution and Nature of Young Firm Networks: A Longitudinal Perspective. *Small Business Economics*, *21*(2), 115–134.

Shane, S. (2003). *A General Theory of Entrepreneurship: The Individual-Opportunity Nexus*. Cheltenham: Edward Elgar.

Simon, H. (2009). *Hidden Champions of the Twenty-First Century: The Success Strategies of Unknown World Market Leaders*. New York: Springer.

Tödtling, F., & Trippl, M. (2005). One size fits all? Towards a differentiated regional innovation policy approach. *Research Policy*, *34*(8), 1203–1219.

Torre, A., & Gilly, J.-P. (2000). On the Analytical Dimension of Proximity Dynamics. *Regional Studies*, *34*(2), 169–180.

Trippl, M., Asheim, B., & Miörner, J. (2015). Identification of regions with less developed research and innovation systems research and innovation systems. *CIRCLE Papers in Innovation Studies*, *1*, 1–22.

Uzzi, B. (1996). The Sources and Consequences of Embeddedness for the Economic Performance of Organizations : The Network Effect. *American Sociological Review*, *61*(4), 674–698.

Vaillant, Y., & Lafuente, E. (2007). Do different institutional frameworks condition the influence of local fear of failure and entrepreneurial examples over entrepreneurial activity? *Entrepreneurship & Regional Development*, *19*(4), 313–337.

Virkkala, S. (2007). Innovation and Networking in Peripheral Areas - a Case Study of Ermergence and Change in Rural Manufacturing. *European Planning Studies*, *15*(4), 511–529.

Ward, N., & Brown, D. L. (2009). Placing the Rural in Regional Development. *Regional Studies*, *43*(10), 1237–1244.

Welter, F. (2011). Contextualizing Entrepreneurship - Conceptual Challenges and Ways Forward. *Entrepreneurship Theory and Practice*, *35*(1), 165–184.

Westlund, H., & Bolton, R. (2003). Local Social Capital and Entrepreneurship. *Small Business Economics*, *21*(2), 77–113.

Westlund, H., & Gawell, M. (2012). Building social capital for social entrepreneurship. *Annals of Public and Cooperative Economics*, *83*(1), 101–116.

Westphal, J. D., Seidel, M.-D. L., & Stewart, K. J. (2001). Second-Order Imitation: Uncovering Latent Effects of Board Network Ties. *Administrative Science Quarterly*, *46*(4), 717–747.

Zahra, S., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. *Academy of Management Review*, *27*(2), 185–203.

Center for Regional Economic Development (CRED)

University of Bern

Schanzeneckstrasse 1

P.O.Box 8573

CH-3001 Bern

Telephone: +41 31 631 37 11

Fax: +41 31 631 34 15

E-Mail: info@cred.unibe.ch

Website: http://www.cred.unibe.ch

The Center for Regional Economic Development (CRED) is an interdisciplinary hub for the scientific analysis of questions of regional economic development. The Center encompasses an association of scientists dedicated to examining regional development from an economic, geographic and business perspective.

Contact of the authors:

Sandra Bürcher, Antoine Habersetzer, Heike Mayer

Institute of Geography & Center for Regional Economic Development

University of Bern

Hallerstrasse 12

CH-3012 Bern, Switzerland

Telephone: +41 31 631 88 75

Email: sandra.buercher@giub.unibe.ch, antoine.habersetzer@giub.unibe.ch, mayer@giub.unibe.ch