

Entrepreneurship and Regional Development: A Literature Review.

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Abstract: *This literature review examines how entrepreneurship and regional development has been previously addressed theoretically and empirically. Regional Studies and Entrepreneurship are two fields with their own distinct literatures. The purpose of this systematic literature review is to provide a comprehensive overview of the landscape of an interdisciplinary field; show its evolution and progress over the past decades and synthesize its findings by combining the insights of the two literatures. A systematic search is conducted in the respective leading journals of entrepreneurship and regional studies. A total of 130 peer-reviewed articles are reviewed and coded. The findings show a drastic increase of the number of articles from 2004 and onwards, thus the debate seems highly contemporary. Another finding reveals a wealth of quantitative and econometric studies. This systematic literature review increases the transparency of an abundant and interdisciplinary body of literature as well reveals important empirical research gaps and conceptual shortcomings.*

¹ In WoS the W/1 parameter is substituted by the parameter SAME, which means the terms have to be within the same sentence.

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1. Introduction

In the past decades the entrepreneurship literature has continuously refined its original concepts and could identify for example different types of entrepreneurs and businesses that particularly rely on their immediate environment, for example rural, local or regional entrepreneurs, or returning entrepreneurs. Undoubtedly, the regional environment – for example education, culture, social support system, technology, expertise – plays an important role in the changing conditions for entrepreneurship (Fischer and Nijkamp 2009). The special issue of ‘Regional Studies’ (1994, Vol. 28 Iss. 4) concerned with the regional variation of new firm formation, is examining spatial influences on entrepreneurship in regions in different countries. The general consensus is that spatial conditions greatly influence new firm formation rates and that “the local social and economic milieu is the most important in fostering new firm formation.” (Garofoli 1994, p. 391). The immediate environment and relations, for example, with family, networks and role models therefore have an important influence on entrepreneurial activity (Julien 2007). Accordingly, attention needs to be given to context-specific aspects when studying entrepreneurship as these are likely to have an influence on the entrepreneurial process itself and entrepreneurial activity in regions.

Previous research acknowledges that the role of entrepreneurship in regional development is vital. Entrepreneurship research, spatial economics and other social sciences have not only established that regions have an important influence on entrepreneurship, but also the other way around, that entrepreneurship has a positive impact on regional development. It is therefore necessary to explore and understand the relation between entrepreneurial activity and regional development. About three decades ago, research on entrepreneurship and its effects on regional development as well as regional properties affecting entrepreneurship has emerged as a central area of inquiry within the fields of entrepreneurship and regional studies. It is now time to take stock and explore how entrepreneurship and regional development has been addressed theoretically and empirically thus far.

Regional Studies and Entrepreneurship are two distinct fields with their own distinct literatures. The research questions are: how do these two fields talk about the respective other? What is the role of entrepreneurship on regional development? What is the role of regional conditions on entrepreneurship? What are the common discourses and what the differences. Which terminologies and methodologies are used when one field examines issues of the other?

A literature review mapping and assessing the conceptual evolution, the methodological advancements and the empirical contributions of this particular interdisciplinary field has not yet been undertaken. In order to gain a fuller understanding of the relation between entrepreneurship and regional development, is necessary to combine the insights of the two literatures. This article attempts to fill this void by examining how entrepreneurship and regional development has been conceptualized and addressed empirically with the goal to create an analytical synthesis covering the literature on the topic from the two bodies of knowledge.

After this introduction, this paper is structured as follows: section two is concerned with the method of enquiry, demonstrating the systematic search process. Section three is concerned with a brief outline and analysis of the descriptive statistics and the cross-citation analysis. The major part of this section reviews the extant literature on the topic, highlights major contributions and different perspectives. Finally, the discussion section outlines theoretical inconsistencies, presents theoretical implications and suggestions for further research.

2. Method of Enquiry

The search is limited to the top ten international journals in Entrepreneurship (according to the ABS Academic Journal Quality Guide 2010) and Regional Studies (according to Maier 2005). To ensure scientific quality, the search is restricted to publications that had undergone peer review and been accepted in scientific journals with a traditional anonymous peer-review process. An analytical and critical reading in line with Hart (1998) is carried out according to a reading guide that contains 27 pre-defined categories which codes the articles systematically and thematically. These codes

include for example number of ISI/Scopus citations, main themes, theories used, methods applied, and purpose and results of the article. Table 1 presents an overview of the stages of the systematic search process.

INSERT TABLE 1 ABOUT HERE

First, a Boolean search is conducted in those databases that cover each of the selected journal best (for a list see Appendix A1), amongst others these are ISI Web of Science, Scopus (Elsevier), and Business Source Complete. All of the selected databases allow for an advanced search option where the searcher is able to construct his/her own comprehensive search string. For this literature review, the following search string is used in title, abstract and keywords:

(TITLE-ABS-KEY=(entrepreneur OR "new venture*" OR "new firm formation*") AND TITLE-ABS-KEY=((region* W/1 develop*) OR (region* W/1 renew*) OR (region* W/1 growth*) OR (rural* W/1 develop*) OR "regional economic growth" OR "declining area*" OR "declining region*")) OR (TITLE-ABS-KEY=((region* W/1 entrepreneur* OR (rural W/1 entrepreneur*) OR (communit* W/1 entrepreneur*) OR "indigenous entrepreneur*" OR "local entrepreneur*"))*

The asterisk wildcard operator * is used to search for variations of a word and will replace multiple characters anywhere in this word. AND and OR are the Boolean operators that either find those articles that contain all of the terms, or that contain any of the terms. W/n represents a proximity parameter, where the terms in the search must be within a specified number of terms (n)¹ (SciVerse, Elsevier, 2011).

Step one produced a total of 236 articles in abstract, title and keywords of scientific peer-reviewed articles. Step two, limits the search to the period 2000 - 2010, which produced 182 articles. In step three a qualitative assessment of the 182 article abstracts further reduces 29 articles that are entirely unrelated to the discussion of the topic but somehow met the search criteria. Step four limits the sample to articles from journals with an ongoing fruitful discussion of the topic, which is defined by having published 7 or more articles in the period of 2000-2010. This reduced the sample to 121 papers. The last step five, adds nine seminal and/or highly-cited (according to the ISI Web of Science Citation Report®) articles that somehow slipped the search criteria, which results in a final number of 130 articles for review. The latter criterion ensures that the most influential articles are included

even if these are not published in the leading journals, or fall outside the specified criteria (for example year).

3. Analysis of the Results

3.1 Descriptive Statistics

The findings show that a considerable amount of the discussion takes place in the selected high ranking journals, and thus the issue is considered important in both fields. The distribution of years ranges from 1976 to 2010. Most articles are published in the period from 2004 to 2010. The results show that the field is highly comprised of empirical studies (71 percent), while 21 percent of the articles are theoretical in nature, which include conceptual-, methodology- or review papers. Further, the results show a high proportion of 56 percent quantitative and econometric studies, while merely 30 percent apply qualitative methods and 14 percent apply a mixed methods approach that can either be comprised of different qualitative methods (majority), different quantitative methods or a combination of qualitative and quantitative methods.

INSERT FIGURE 1 ABOUT HERE

The high number of empirical papers in contrast to theoretical papers may indicate that the field has reached some level of maturity, where concepts have become rather clear and are thus sought to be empirically tested. Especially, econometric methods have gained increased attention and have been constantly developed and refined over time, for example to include more elaborate time lag structures or more precise variables to capture the phenomenon under investigation.

3.1.1 Country of Data

By far most of the focus concerning entrepreneurship and regional development and on the determinants of start-up rates in regional settings has been gathered in western countries, that is Sweden (for example Davidsson et al. 1994; Berggren and Dahlstrand 2009; Johannisson et al. 2002), Germany (for example Audretsch and Fritsch 1994; Mueller 2006), Italy (for example Meccheri and Pelloni 2006; Friedman and Desivilya 2010), Great Britain (for example Mueller et al.

2008; Thurik 2003; Anderson 2000); and the US (for example Flora et al. 1997; Renski 2009). Developing or emerging economies receive limited attention, at least in the selected high ranking journals. Some notable exceptions exist (for example Johnstone and Lionais 2004; Naudé et al. 2008, Yang and Xu 2006; Ndoen et al. 2002). However, studying Chinese regions have gained increasing research interest since early-mid 2000 (see for example Li and Matlay 2006; Ma 2002; Pereira 2004).

3.1.2 Levels and Units of Analysis

About two-thirds of the studies depart from a regional level of analysis, whereas the rest looks at industry-level (4 percent), firm-level (21 percent) and individual-level (9 percent). The unit of analysis varies from regions, organizations, entrepreneurs, individuals, new firms, communities, areas, municipalities, self-employed, networks, districts, counties, to clusters and industrial districts.

When studying entrepreneurship (that is the unit observation) the terms entrepreneurs, new firm formation, start-up, self-employed are often used interchangeably. This is also reflected in the measures for studying entrepreneurship. Here are some examples: self-employed (Georgellis and Wall 2000; Beugelsdijk and Noorderhaven 2004), new, young and small firms (that is younger than 3 years and less than 20 employees, Mueller 2006), new VAT registrations (Mueller et al. 2008), single-establishment firm with autonomous ownership (Davidsson et al. 1994), firms or single-unit firms with less than 500 employees (Acs and Armington 2004; Chen and Lin 2006). This shows that after decades of entrepreneurship research, scholars still use different notions of the phenomenon. No doubt that entrepreneurship is a complex concept, but it seems to be still an ill-defined concept (OECD 1998). The question derived from this is, what are we actually measuring when we study entrepreneurship? The obvious problem with differences in the measures and in the collection of data is that comparisons are problematic and thus not appropriate. Overall, the entrepreneurship literature, especially qualitative studies, are more stringent on their definitions of who an entrepreneur is, what entrepreneurship is and what it contains.

3.1.3 Cross-citation Analysis

A cross-citation analysis (Small 2010) is performed to investigate and depict the extent and frequency by what one literature cites the other (that is the number of citations that journal i receives from article/journal j).

Overall, the journals *Small Business Economics* and *Regional Studies* seem to be well connected, as they cite each other's articles extensively. Further, it seems that the entrepreneurship journals, especially *Entrepreneurship and Regional Development* and *Small Business Economics* do cite the regional studies literature; in particular the journals *Regional Studies*, *European Planning Studies* and *Environment and Planning A*. This seems to be reciprocated by the regional studies journals; these are citing in particular *Journal of Business Venture*, *Small Business Economics*, and *Entrepreneurship and Regional Development*. Interestingly, *Small Business Economics*, which is an entrepreneurship journal, is citing regional science journals far more than the entrepreneurship literature. The journals with the most citations from the top 10 entrepreneurship and regional studies journals are *Entrepreneurship and Regional Development*, *Small Business Economics* and *Regional Studies*. Overall, it seems that both bodies of literatures are well aware of each other's contributions to the debate, thus we can perhaps call entrepreneurship and regional development an actual interdisciplinary field.

3.2 The Landscape of the Field

The in-depth reading indicates that both streams of literature seem to agree that the relationship between entrepreneurship and regional (economic) development is rather complex (Fritsch and Mueller 2004), and that direct (short-term) and indirect (long-term) effects can be observed (van Stel and Suddle 2008). Research in the regional studies literature focuses mainly on determining the environmental conditions that are associated with locations that are strong in entrepreneurial initiatives. In contrast, the entrepreneurship literature emphasizes that the actions of the entrepreneur(s) and the involvement of the community are needed for regional development

(Hjorth and Johannisson 2008). The entrepreneurship literature focuses much on the entrepreneur as an initiator for regional development (Berglund and Johansson 2007), thus concepts such as for example community entrepreneurship (Johannisson and Nilsson 1989; Johnstone and Lionais 2004), rural entrepreneurship (Hoy and Vaught 1980; Wortman 1990), and local/regional entrepreneurship (Lowe 1993) have been developed and explored.

3.2.1 Entrepreneurship and regional development

Overall, regional development is understood as a dynamic process (Fischer and Nijkamp 2009) and refers to the provision and assurance of equal opportunities, and sustainable economic and social well-being of individuals in areas that are typically less developed. Regional development can include several dimensions: (i) the spatial and territorial dimensions (that is space and place, Johannisson and Dahlstrand 2009), and the (ii) time and historical dimensions (Johansson 2009). These dimensions are more precisely: life-setting (for example urban, peripheral, outskirts, and rural area), economic (for example regional economic growth, new firm formation rates), outlook (for example community life, traditions), competences/resources (for example availability of human, social and financial capital), institutional and political (for example regional policies), and infrastructure (for example “hard” and “soft” infrastructure, OECD 2009). Further, regional development “implies an intention to change human behaviour and socio-economic contexts” into desirable, beneficial, and sustainable regional conditions (Cécora 1999, p. xi). Hence, regional development is primarily given a positive connotation in the literature, whether in the entrepreneurship or regional studies literature.

Regional development is thus about transforming a region or locality, economically as well as socially. Berglund and Johansson (2007, p. 502) underline that “regional development is about social change and transformation, and, as change means to go from something stable and known to something less stable and more unknown we could imagine there are – depending on the degree of stability – lots of interaction among the people involved”. Simplified, economic development is

about growth in GDP and local income and net job creation and growth. Social regional development on the other hand may contribute to (i) regional learning (Florida 1995), (ii) “the development of cooperation, solidarity, participation and trust within a region by bringing various groups and institutions together” (Seidl et al. 2003, p. 343), and (iii) the creation of pride in and support for the region, its heritage and its economy (Anderson 2000).

Figure 2 illustrates the factors that influence on regional development found in the extant literature. Regional development is influenced by a number of driving forces, namely availability and access to human capital, the level and speed of innovation, the presence of soft and hard infrastructures, existing welfare and institutional structures and finally the existence of entrepreneurial activity in a particular region/locality (Cornett 2009; Naudé et al. 2008 Audretsch and Keilbach 2004).

INSERT FIGURE 2 ABOUT HERE

The presence of entrepreneurs (individual level) and their enterprises (firm level) make up what Audretsch and Keilbach 2004 term the ‘entrepreneurial capital’ of regions. Entrepreneurial capital is a “region’s endowment with factors conducive to the creation of new businesses’ (Ibid., p. 951) and can be added as stock capital in a production function. Entrepreneurship capital goes beyond the traditional understanding of entrepreneurship as an action, process and/or activity, it includes a variety of agents and legal, institutional, and social factors that generate an environment conducive to entrepreneurial activity (Audretsch and Keilbach 2005). The concept includes formal and informal networks, social acceptance of entrepreneurial activities, the existence of a regional milieu that encourages start-up activities, and the presence of financiers willing to share risks (Audretsch and Keilbach 2004; Naudé et al. 2008). However, thus far the only way to measure entrepreneurial capital is by the rate of new small firm start-up’s per population, which does not capture the entirety of the concept.

It is generally acknowledged that the relationship between entrepreneurship and (regional) economic development is multifaceted (van Stel and Suddle 2008). In this relationship direct and indirect effects for regional development are present (figure 3). Direct or immediate effects typically relate to new job creation due to new business start-ups; whereas indirect effects (or long-term effects) relate primarily to the negative crowding-out of existing firms and competitors (resulting in closures and job losses) and typically arise some time after the new businesses are established (van Stel and Suddle 2008; Fritsch and Mueller 2004; Mueller et al. 2008).

In the following sections this paper will explore (I) how entrepreneurship contributes to regional development (that is the role of entrepreneurship in regional development) and (II) how regional structure affects entrepreneurship (that is the role of spatial characteristics and context in entrepreneurship). Figure 3 illustrates the interrelation between agency and context.

INSERT FIGURE 3 ABOUT HERE

3.2.2 The role of entrepreneurship (agency) in regional development

Previous research has extensively explored the question whether large and established firms or new entrepreneurial businesses contribute to regional growth and development. This question has also sparked large political interest, as regional development policies and investments should target the ‘right’ kind of businesses. However, there is controversy in the literature whether start-up businesses contribute to growth and development in regions. Some researchers advocate that “small enterprises serve as a locomotive of regional growth and employment creation” (Audretsch and Fritsch 2002, p. 114, for example Feldman 1996, Feldman 2001) while others do not find a significant connection (for example Fritsch 1997; Audretsch and Fritsch, 1996). Audretsch and Fritsch (2002) argue however that both sides are correct: “new firm start-ups as well as large incumbent firms may make a significant contribution to economic development – but not in all regions and at all times” (p. 114). An explanation for this can be found in Nelson and Winter’s (1982) conceptualization of growth regimes. The authors - who depart from an evolutionary

economics perspective - argue that in some regions large established firms are more conducive to growth, while in other regions small [entrepreneurial] firms are the engine of local economic development. In some industries small firms have clearly an innovative advantage (for example in the entrepreneurial regime, Audretsch and Fritsch 2002), while in others large established firms do have an innovative advantage (that is routinized regime). However, the literature generally does agree that the effects of new firm formation on regional development, especially on employment creation and growth are positive and emerge over a long period of time (Fritsch 2008).

In his seminal work “How our smallest companies put the most people to work“, Birch (1987) found that small and medium-sized enterprises create far more new jobs in the US than their large counterparts. After this revelation, research interest on the effects of entrepreneurship on job creation has increased drastically (van Stel and Suddle 2008). Many consequent studies showed that indeed a positive link between new firm formation on job creation and growth in regions, even if firm deaths are taken into account (Reynolds 1999, Acs and Armington 2004; Audretsch and Thurik 2001; Audretsch and Fritsch 2002, Thurik 2003; Mueller et al. 2008; Baptista et al. 2008). Kalantaridis and Bika (2006a) further find that entrepreneurs who generate new jobs tend to recruit locally, which is crucial for boosting regional development. However, the effects are naturally time dependent, and econometric studies taking a time lag into account first appeared in the early 2000’s (for example Georgellis and Wall 2000, Fritsch and Mueller 2004). These studies show that for example in Germany, the UK, US; Portugal and The Netherlands positive employment effects of start-ups are relatively small in the first three years, but then increase significantly after year six (Caliendo and Kritikos 2010; Fritsch and Mueller 2004; Mueller et al. 2008), and year eight in Portugal (Baptista et al. 2008).

Surely, employment creation and growth is one of the most studied effects of entrepreneurship on regional development, and is naturally dominated by quantitative large-dataset research. In addition to the short-term and direct job creation effect, Fritsch and Mueller (2004) find

two indirect effects of new firm formation: a medium/long-term effect that is called the displacement effect, which is causing "old" firms to go out of business and thus leading to job losses. Second, the so called induced effect that leads to higher employment growth again, after the new and surviving firms induce improved performance and thus stimulate employment growth. Recently, Mueller et al. (2008) re-examine this link between entrepreneurship and job creation over time by means of an econometric analysis of a British longitudinal dataset. Their results indicate that regions characterized with low start-up rates (typically rural and peripheral areas) have a strong immediate direct effect of job creation, but have a long-term negative effect of employment growth. New firms displace existing firms, and therefore jobs are lost. The authors find that more jobs are lost in such less prosperous areas than can be created and sustained, which ultimately lends evidence to their argument that there is a wrong type of entrepreneurship considering the negative employment growth in rural regions.

Most of the studies mentioned above depart from a firm level perspective. Looking at the individual level, thus considering the role of the entrepreneur as an individual actor in regional development. The majority of these studies are typically qualitative in nature. The entrepreneur as an individual is recognized as an initiator for regional development. This goes beyond the single enterprise, or firm-level which is often solely considered in the economic regional development approach (Berglund and Johansson 2007, p. 502). Studies on the individual level focus for example on community entrepreneurship (coined the term Johansson and Nilsson 1989; Johnstone and Lionais 2004), rural entrepreneurship (Hoy and Vaught 1980; Wortman 1990), local/regional entrepreneurship (Lowe 1993). Hjorth and Johansson (2008) argue that regions need the involvement of the community (inhabitants) and install entrepreneurial discourse (Gaddefors and Cronsell 2009) in order to socially and economically transform a region to create regional development.

Moreno et al. (2007) study the effects of entrepreneurial self-confidence on regional growth through a survey of 1314 firms in 14 provinces in Argentina. The authors find entrepreneurs' self-confidence in their business activity is positively related to the growth of their businesses and thus to regional growth of the economy in terms of GDP per capita. They conclude that some regions have a “‘local dynamism’ that tends to reinforce the confidence of the entrepreneurs located within them” (Ibid, p. 44). However, by using cross-sectional data the author’s could not establish the direction of causality; thus potential cyclic effects that may show an inverse relationship could not be captured. Another study on an the individual level could indeed find a positive link between entrepreneurial orientation (and the consideration that success is due to individual effort) on economic growth (Beugelsdijk and Noorderhaven 2004). Beugelsdijk and Noorderhaven (2004) surveyed 888 self-employed in 54 European regions to examine if societal characteristics such as entrepreneurial culture are linked to regional development. The authors use a regional aggregate for entrepreneurial attitude, in the sense that the more entrepreneurial attitudes the higher a region/locality scores on having an entrepreneurial culture. By doing this, they find that local social conditions contribute to regional economic development, as regions with an entrepreneurial culture grow faster than regions that score lower. The argument then follows that geographic localities that are characterised by a culture that is conducive to entrepreneurship may have higher start-up rates and more innovation. This, in turn, may influence economic growth.

3.2.3 The role of spatial characteristics and context in entrepreneurship

Here, research is primarily concerned with the regional context and the socio-economic factors that affect the development of entrepreneurship. It is well established that the entrepreneurial activity varies considerably across regions within a country (OECD 1998). Start-up rates vary from 5,7 to 14,8 start-ups per 1.000 inhabitants in all sectors in Swedish regions (Davidsson et al. 1994); from 7,9 to 20,7 per 1.000 employees in Irish regions (Hart and Gudgin 1994); from 3,6 to 7,1 per 1.000 resident persons in Italian macro-regions (Garofoli 1994), from 10.0 to 59.5 per 10.000

production workers in UK regions (Reynolds et al. 1994), or from 5,1 to 13,3 per 1.000 employees in German regions (Fritsch 1992; Fritsch and Falck 2007). Especially metropolitan or urban regions are known as hot-spots of entrepreneurship, while rural areas typically lag behind with respect to start-up rates.

Anderson (2000) however argues that the socio-material conditions in peripheral areas may become becomes “a feedstock for entrepreneurial action” (p. 103). Thus, even though statistically entrepreneurial activity may be lower in peripheral regions, unique and creative entrepreneurial activity – that can not necessarily be measured in a statistical way - may emerge in these areas as latent resources are transformed into viable profitable business forms and so harvesting (economic) benefit (Ibid., 2000). Other famous successful remote areas that exhibit “regional and local dynamism” (OECD 1998, p. 49) are the Emilia-Romagna area in Italy, Valencia and the Basque Country, or Cumbria in the UK.

Research in this structural perspective is typically concerned with determining the conditions that are associated with locations that are strong in entrepreneurial activities and show high start-up rates. For example strong social structure of innovation (Florida and Kenney 1988b), locations with an entrepreneurial environment (for example Route 66 or Silicon Valley, Saxenian 1994), locations with a good accessibility to venture capital (Avdeitchikova 2009), human and social capital (close to universities and institutions) promote entrepreneurship in a regional context.

The structural perspective research considers aspects of financial, human, and social capital as well as structural exogenous conditions to explain relation between new firms and regional economic growth and development (Moreno et al. 2007). “Structural characteristics can either depress or assist the start-up, survival and growth rates of small businesses” (Naudé et al. 2008). Factorial/Structural approaches however have their limits with regard to explaining interdependencies between the factors underlying entrepreneurship and often times also have difficulties explaining causality (Benneworth 2004).

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Previous empirical research focusing on the determinants of regional entrepreneurship and spatial variations of urban (that is metropolitan), peripheral (that is close to a big city or outskirt) and rural (that is countryside) regions find numerous explanatory factors; for example (1) areas with a high population density are more likely to have higher firm formation rates, because the infrastructure of services and resources is more developed in more populated regions (Audretsch and Fritsch 1994), (2) the rate of unemployment has a negative effect on new firm formation (Davidsson et al., 1994), (3) the employment structure of the region has an effect, as areas with a large proportion of blue-collar/manual workers have lower rates of new firm formation, whereas areas with a high proportion of a highly educated and/or highly specialized workforce has higher start-up rates (Audretsch and Fritsch 1994, Garofoli 1994), (4) new firm formation rates are higher in regions close to cities with universities and higher research institutions where knowledge and technological spillovers are more extensive (Acs et al. 1994), (5) regions dominated by small firms have high rates of new firm formation whereas those dominated by large firms have low rates (Davidsson et al., 1994), (6) the productive structure of specialization of the local industrial system effects firm formation rates (Garofoli 1994), (7) new firm formations are higher in regions where the gross value added per person is greater (Audretsch and Fritsch 1994), (8) new firm formation tends to be higher in localities where the start-up activities involve low capital requirements for entry (Hart and Gudgin 1994), and (9) areas with strong local policy that fosters the technical knowledge base and

encourages entrepreneurial activity have higher entrepreneurial activity (O'Gorman and Kautonen 2004, Chrisman et al. 2002). Finally, (10) regions with a strong entrepreneurial culture that promotes risk-taking, creativity and innovation; entrepreneurial attitude are more conducive to higher rates of entrepreneurship than others (Beugelsdijk and Noorderhaven 2004; Aoyama 2009). Table 2 shows a summary of the spatial characteristics and underlying mechanisms found to be conducive to entrepreneurship in regions. Structural approaches however have their limits with regard to explaining interdependencies between the factors underlying entrepreneurship and often times also have difficulties explaining causality (Benneworth 2004).

INSERT TABLE 2 ABOUT HERE

A general consensus prevails that access to and availability of finance, that is local banks, venture capital, or angel investments is crucial for entrepreneurship, whereas lack thereof may inhibit entrepreneurial activity in regions (Georgellis and Wall 2000; Kalantaridis and Bika 2006). However small fraction of scholars doubt whether the access to finance is a constraint to start-up because entrepreneurs are usually good at bootstrapping and bricolage (that is making do with what is at hand, see Baker and Nelson 2005. In addition to such formal structures influencing on entrepreneurial capital, informal structures (also termed informal institutions), such as regional/local networks, culture, heritage and history shape and influence regional entrepreneurial activity.

The social capital or network perspective is advocated inter alia by Johannisson and Nilsson (1989); Lawton Smith et al. (2005); Jack and Anderson (2002), which binds together the entrepreneur with the structure or immediate context (Berglund and Johansson 2007). The entrepreneur is seen a “networking person utilizing his/her personal network as a vehicle to exchange information while acquiring resources from the [immediate] environment” (Kodithuwakku and Rosa 2002, p. 434; Johannisson 1988). But the local entrepreneur is not only utilizing the network, but also creating entrepreneurial networks. Benneworth (2004) finds that local entrepreneurs increased the scope of entrepreneurial networks while allowing others to benefit from those networks.

Even though regional social capital is found to be important for regional entrepreneurship, Berglund and Johansson (2007) rightfully point out that the network perspective provides only hints as to what processes of regional development could look like, but does not “provide help to what to look for in processes of transformation” (Ibid. p. 502). One could find these hints in connection with the culture perspective. Mønsted (1993) sees the local network as a potential to the creation of culture. Culture plays a vital role in determining the level of local entrepreneurship, as high levels of entrepreneurial activity can be partly ascribed to cultural features of localities (OECD 1998). Overall, culture can explain the less tangible differences or “soft” factors between regions and countries regarding entrepreneurial activity (Johannisson, 1984, Davidsson, 1995, Holmqvist, 2001). Previous research looking at the culture dimension discovers that regional entrepreneurial culture is improved the more entrepreneurs are active in a region, which in turn has positive effects for regional development (Audretsch et al. 2010; Feldman 2001); this is a cyclic process. Further, a local environment, where being an entrepreneur is legitimate or even esteemed is found to be highly conducive to entrepreneurship (Mueller 2006). Thus to increase regional development through entrepreneurship, the surroundings needs to provide a fertile entrepreneurial ground through building and maintaining a culture that is conducive to entrepreneurial attitude and activity. The existence of social acceptance and a positive public attitude towards entrepreneurship is crucial to achieve this (Mueller 2006; Minniti 2005). In the literature, an entrepreneurial environment is typically defined by the amount of new, small and young firms (firm-level) or the presence of other entrepreneurs in a region who legitimize being an entrepreneur legitimate, and act as role models (Psaltopoulos et al. 2005; Mueller 2006; Gaddefors and Cronsell 2009). Aoyama (2009) for example examines aspects of regional culture influencing on entrepreneurial rationality. The author finds that cultural and historical legacy are important underlying mechanisms of entrepreneurial capital in regions. More importantly, Aoyama (2009) finds a reciprocity with respect to context and entrepreneurship, in the sense that entrepreneurs influence the context as much as the context influences entrepreneurship.

This mutual relationship is expressed by a double-headed arrow in figure 3. Even though culture seems vital for a region's entrepreneurial capital, there has been fairly little systematic research of the culture dimension and its practical and policy implications within entrepreneurship and regional development; perhaps because culture is a rather broad and vague concept (OECD 1998).

4. Discussion, Conclusions and Avenues for Future Research

This paper reviewed 130 scientific peer-reviewed articles on the topic of entrepreneurship and regional development published in the leading journals of entrepreneurship and regional studies. This literature review is an attempt to increase the transparency of a field with a vast literature and to explicate how the two fields talk about when examining issues of the other, as well as uncover potential conceptual inconsistencies and shortcomings. Five main issues are discussed in the following, these are (i) methodology and measurement, (ii) firm level versus agency, (iii), concept clarity, (iv) new research themes (v) the importance of studying new forms of entrepreneurship within regional contexts.

(i) Firstly, a major finding reveals a wealth of quantitative and econometric studies, which however often do not measure entrepreneurship on the same premises. Different measures are used to study the notion of entrepreneurship that range from micro to firm level measures, these are entrepreneurs, self-employed, new firms less than 500 employees, and new young firms (less than 3 years old and less than 25 employees). Naturally, this means that comparisons across such studies are problematic and may mean that differences across countries or regions may be due to the diverse data/measures rather than different contexts. In spite of this, such studies are important to shed light on the explanatory factors of entrepreneurship in certain regions as well as the economic outcomes of entrepreneurship on regional development and have certainly gained increasing momentum in this field. However, there is a limit as to what quantitative studies can measure. The entrepreneurial process in regions is a dynamic process; it occurs over time and involves various stakeholders/agents and other dimensions of the immediate, meso and macro environment. Time-series and longitudinal

large dataset studies can compensate for some of the dynamics, however have difficulties to capture its entirety. It is therefore difficult to investigate this process through quantitative methods alone (Kodithuwakku and Rosa 2002). It is argued that the interdisciplinary field of entrepreneurship and regional development needs more in-depth qualitative studies to illuminate the underlying mechanisms and the interrelation between entrepreneurs as individual actors and their regional environment. Thus, this leads to the following questions: how do regional/local entrepreneurs engage and interact with their immediate environment? How do entrepreneurs make use of their local innate resources, which may be historical, natural, or cultural in nature? Quantitative social network analysis for example can measure some of these interdependencies, however fails to encapsulate the multifaceted and intangible aspects of the interrelationships between the immediate environment and the entrepreneurial actors. This is partly due to the difficulty of measuring different kinds of relations (that is family, friends, business), and of separating individual and organizational level relations (Scott 2000).

Further, it is evident from the literature review that there is need for research focusing those indirect, long-term and rather intangible effects that influences entrepreneurship in regions, and the type of entrepreneurship that contributes to sustainable regional development. Surely, studying such rather fuzzy and/or complex dimensions poses various methodological challenges, ranging from variable and proxy construction to choice of unit of analysis and observation. This is where combined qualitative and quantitative methods may be beneficial, as to answer a broad spectrum of what, how and why questions; as well as establish causality, antecedents and underlying mechanisms and including a variety of regional actors and context-specificities contributing to the explanation of the phenomenon.

(ii) Furthermore, the majority of the research on the topic has departed from a regional level of analysis. Literature on regional development “tends to overlook the agency of individuals and that to do so ignores processes that lead to the distinctive characteristics of localities” (Lawton Smith et

al. 2005, p. 449). Thus, this opens up for future research to gain deeper understanding of which type of entrepreneurship prevails in different regional contexts, and how local entrepreneurial actors contribute to (sustainable) regional development that goes beyond the traditional measures of growth, for example in terms of job creation and capital accumulation.

(iii) It is stressed here that regional development needs to be conceptualized in a more holistic way. For some regional development is equivalent to regional growth, for others regional development includes much more than that; it includes social transformation, change, regional learning, and development of regional culture and may not always follow a straightforward linear pattern. Thus, we need to strive for improved concept clarity.

(iv) To date, much of the previous research especially by economists has focused on determining the factors of regional start-up rates and explaining the spatial variation in regions. Previous studies have also investigated the role of financial, human and social capital in regional entrepreneurship quite extensively. However, the aspects of historical legacy, heritage, or culture are under-researched. This may be partly due to culture and heritage are fuzzy, broad concepts that are difficult to measure, especially quantitatively. Nonetheless, culture and heritage may be rich new avenues to researching entrepreneurship and regional development.

(v) Finally, there is a limited amount of studies focusing on the local/regional effects of returning entrepreneurs (Gaddefors and Cronsell 2009) newcomers (Jack and Anderson 2002), or immigrant and expatriate entrepreneurs (Kalantaridis and Bika 2006; Stone and Stubbs 2007). However, this type of entrepreneur may play a crucial role for regional development, in particular in fostering an entrepreneurial climate (Gaddefors and Cronsell 2009). However, why these entrepreneurs return and how they utilize their local and 'imported' knowledge and network, and how they specifically contribute to regional development is largely unknown and needs further investigation. The few previous studies focusing on returnees find that these entrepreneurs are key actors in the revitalization of declining regions (Gaddefors and Cronsell 2009; Wright et al. 2008).

This is because (i) they tend to grow bigger firms than local entrepreneurs (Dai and Liu 2009; Wright et al. 2008) and (ii) have an international attitude, thus tend to export to international markets (Dai and Liu 2009), and (iii) they return with new knowledge to the region which may open opportunities for new entrepreneurial activities by locals (Gaddefors and Cronsell 2009), and lastly (v) are able to provoke change and influence on the local identity (Ibid., 2009). Additionally, Gaddefors and Cronsell (2009) argue that an entrepreneurial attitude to life needs to become embedded in a region to attain regional development. And returning entrepreneurs facilitate the development of an entrepreneurial attitude in regions, as they serve as role models for local community as well as facilitate the process of co-producing the entrepreneurial region with local stakeholders.

Regional studies and entrepreneurship scholars have established that entrepreneurship is largely dependent on its context. Urban, outskirt, and rural regions may for example create and nurture different types of entrepreneurial activity. However, only a small amount of research tackled the genesis and underlying mechanisms of regional/local entrepreneurship, especially in underprivileged economies and the role the immediate regional environment has on this entrepreneurial process. It is argued that there is a need to obtain a more nuanced understanding of local entrepreneurship, how entrepreneurs are embedded in their context, and how they interact with their immediate environment and make use of the innate resources (that is natural, historical and cultural). These insights may be essential to understand why some regions are more entrepreneurial than others, and why certain types of local entrepreneurship prevail in certain regions.

In conclusion, this interdisciplinary field is highly contemporary and relevant for practice. Empirically, we have come a long way exploring and explaining, but there are still plenty of avenues for future research. In particular, investigating the effects and implications of a regions' heritage, history, and culture on entrepreneurship and regional development may open up for a fruitful future debate.

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TABLES AND FIGURES

TABLES

Table 1: Stages of the literature search process

Stage	Description of task	Minus	Total
1.	Systematic Boolean search in various databases that cover the selected journals best, using a self-constructed search string (see below), Feb. 2011		236
2.	Limit to period 2000-2010	-54	182
3.	Qualitative assessment excludes a further 29 articles	-29	153
4.	Limit to journals with an ongoing dialogue on the topic, that is journals that have published seven or more articles	-32	121
5.	Add seminal and highly-cited works, that somehow slipped the search term	+9	130

Table 2: Summary of Spatial characteristics and underlying mechanisms influencing (positively/negatively) on new firm formation rates

Environmental / Spatial Characteristics	Effect	Authors
1) Policies and support initiatives		
Local policy interventions, for example - foster technical knowledge base - encouraging entrepreneurial activity - government support and policies - local empowerment - elimination of legal and administrative obstacles - entrepreneurial expertise/support services	+	O'Gorman and Kautonen 2004, Kangasharju 2000; Chrisman et al. 2002, Li and Matlay 2006, Belso Martínez 2005; Caliendo and Kritikos 2010
2) Socioeconomic conditions		
Availability / Presence of Human Capital (Proportion of highly skilled/educated labour, high level of knowledge)	+	Georgellis and Wall 2000; Kalantaridis and Bika 2006, Davidsson et al. 1994; Audretsch et al. 2010
Availability of / Access to financial capital (for example local banks, angel investors, seed capital)	+	Florida and Kenney 1988a; Malecki 1997 Audretsch and Keilbach 2004; Naudé et al. 2008
Concentration of venture capital activity	+	Avdeitchikova 2009, Mason and Harrison, 2002
Unemployment rate	+/-	Georgellis and Wall 2000; Davidsson et al. 1994
Social capital (for example networks)	+	Flora and Flora 1993; Audretsch and Keilbach 2004; Jack and Anderson 2002; Johannisson and Dahlstrand 2009;
Availability of infrastructure (for example technological infrastructure)	+	OECD 2009, Benneworth 2004, Florida 2007; Morgan 1997
High proportion of women in the population	-	Georgellis and Wall 2000
High household incomes	+	Krugman 1991, Audretsch and Fritsch 1994, Garofoli 1994; Feldman 2001 (negative for Georgellis and Wall 2000)
3) Industry composition		
Specialization of industry	+/-	Garofoli 1994, Davidsson et al. 1994
Proportion of SMEs in the population of existing firms	+	Davidsson et al. 1994; Aoyama 2009
Knowledge-intensive industry	+	Braunerhjelm and Borgman 2004
Sectoral diversity	-	Audretsch et al. 2010
4) Regions-specific conditions		
Agglomeration, Cluster, Regional Innovation Systems	+/-	Krugman 1991, Cooke 2003 O'Gorman and Kautonen 2004; Kangasharju 2000
Existing regional assets (economic base)	+	Benneworth 2004
Entrepreneurial culture, for example - that promotes risk-taking, creativity and innovation; entrepreneurial attitude, dynamism, and entrepreneurial ability - presence of social acceptance of entrepreneurial activities / legitimacy of entrepreneurship - entrepreneurial environment (that is many new small and young firms in a region and/or presence of other entrepreneurs) - positive public attitude towards entrepreneurship	+	Julien 2007; Saxenian 1994; Beugelsdijk and Noorderhaven 2004; Moreno et al. 2007; Audretsch 2001; Kangasharju 2000, Aoyama 2009; Audretsch and Keilbach 2004; Mueller 2006; Minniti 2005, Psaltopoulos et al. 2005, Gaddefors and Cronsell 2009; Audretsch et al. 2010
Attractive living conditions and natural amenities	+	Keeble, 1992; Meccheri, 2006
Closeness to research universities (for example potential for spin-out's literature)	+	Acs et al. 1994; Audretsch and Feldman 2004, Acs et al. 1994; Berggren and Dahlstrand 2009; Agrawal 2002; Audretsch and Keilbach 2004

FIGURES

Figure 1: Distribution of Methodology

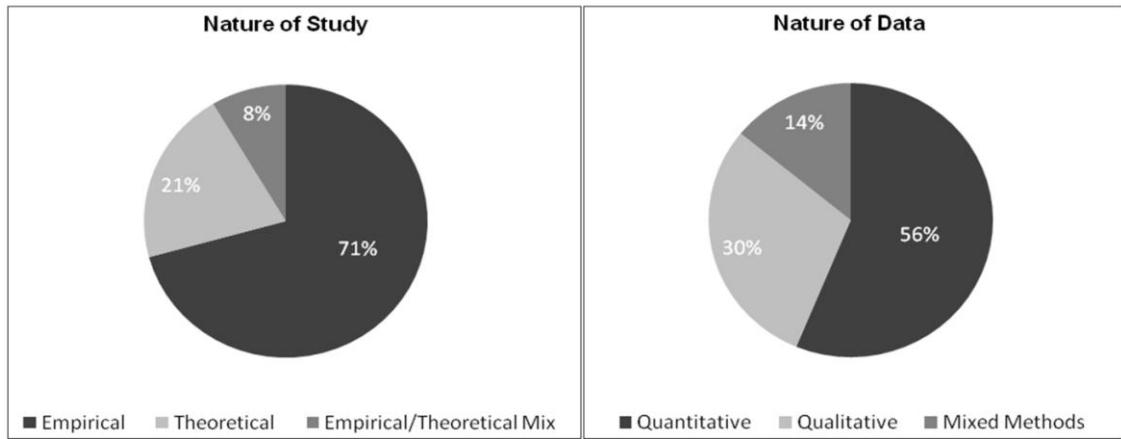
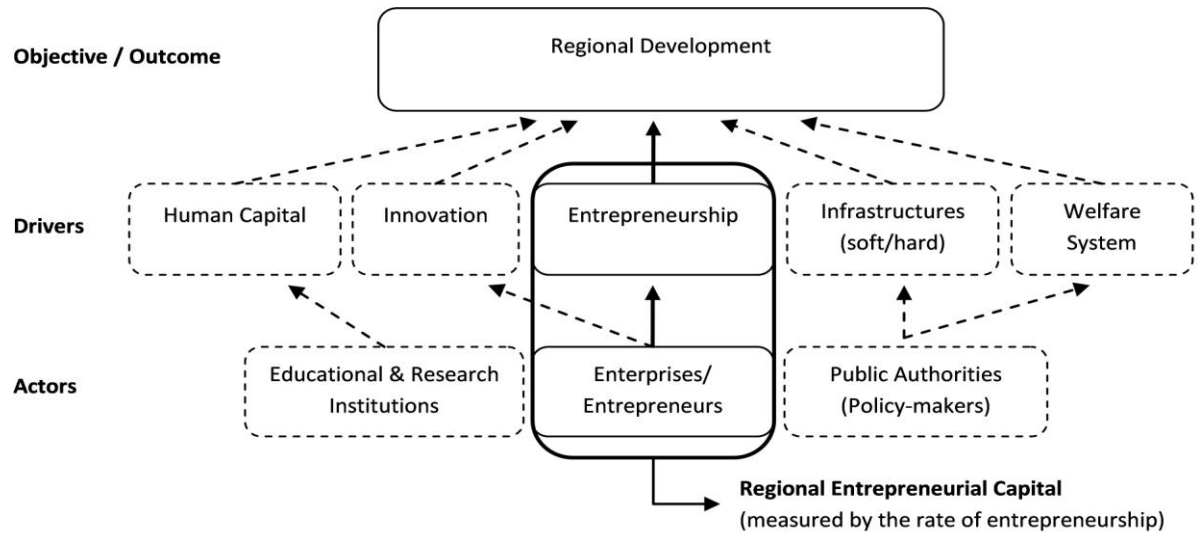
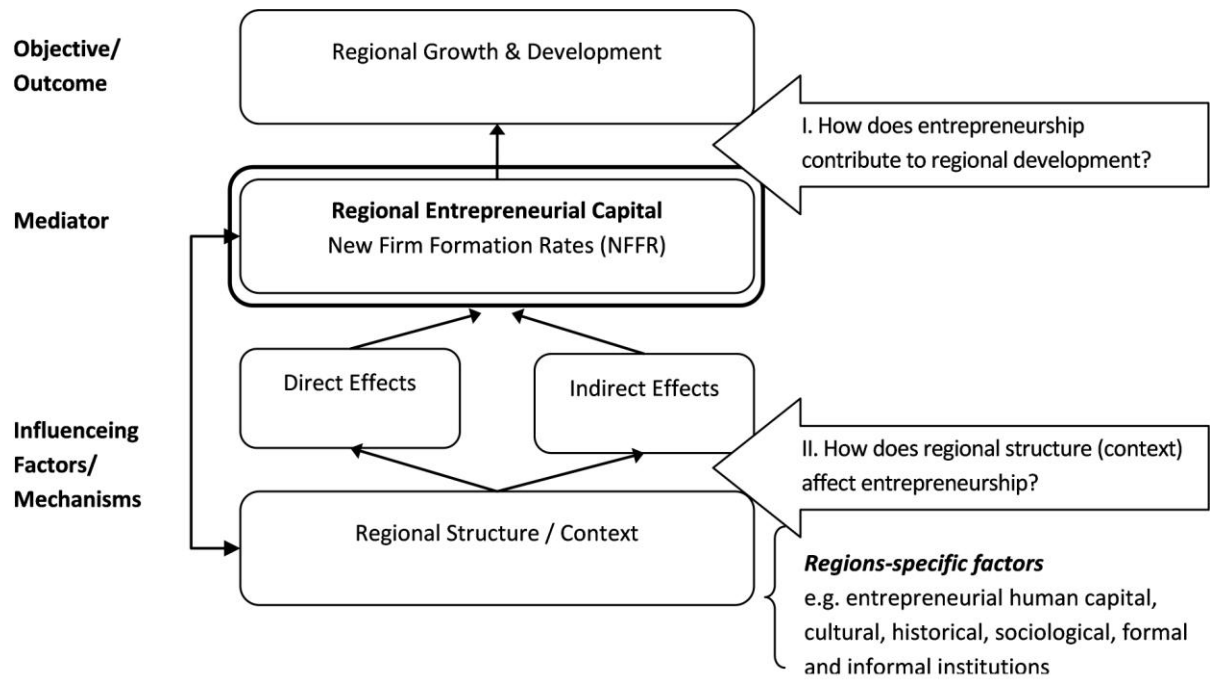


Figure 2: Regional Development Model



Source: Adapted and modified from Cornett 2009, Naudé et al. 2008; Audretsch and Keilbach

Figure 3: Effects influencing on regional entrepreneurship



Source: Author's elaboration

APPENDIX

Appendix A1: List of selected journals and number of articles

Rank*	Journal	Publisher	ISSN	Start year	Database Sources	Date of latest search	No. of articles	No. of selected articles
E 1	Journal of Business Venturing	Elsevier	0883-9026	1985	Business Source Complete 1985-	24Feb2011	3	-
E 2	Entrepreneurship Theory & Practice	Wiley-Blackwell	1042-2587	1976	Business Source Complete 1988-	24Feb2011	12	7
E 3	Small Business Economics	Springer	0921-898X	1989	Business Source Complete 1989-	24Feb2011	16	11
E 4	Entrepreneurship and Regional Development	Routledge	0898-5626	1989	Scopus 1990+1993+1996-	24Feb2011	47	29
E 5	Journal of Small Business Management	Wiley-Blackwell	0047-2778	1963	Business Source Complete 1971-	24Feb2011	9	-
E 6	International Small Business Journal	Sage Publications	0266-2426	1982	ABI Inform 1992-1996 Business Source Complete 1996-	24Feb2011	10	-
E 7	Strategic Entrepreneurship Journal	John Wiley and Sons	1932-4391	2007	Web of Science (2008-)	24Feb2011	1	-
E 8	Journal of Small Business and Enterprise Development	Emerald	1462-6004	1991	ABI Inform (2003-)	24Feb2011	10	8
E 9	Family Business Review	Sage Publications	0894-4865	1988	ABI Inform (1999 vol. 4-)	24Feb2011	0	-
E 10	International Journal of Entrepreneurial Behaviour and Research	Emerald	1355-2554	1995	ABI Inform 1995-	24Feb2011	5	-
RS 1	Regional Studies	Routledge	0034-3404	1967	Web of Science 1967-	24Feb2011	46	33
RS 2	Journal of Regional Science	Wiley-Blackwell	0022-4146	1958	Web of Science 1958-	24Feb2011	6	-
RS 3	Papers in Regional Science	Wiley-Blackwell	1056-8190	1955	Scopus 1961-1985 + 1989-	24Feb2011	5	-
RS 4	Regional Science and Urban Economics	Elsevier	0166-0462	1971	Web of Science 1975-	24Feb2011	0	-
RS 5	Urban Studies	Sage Publications	0042-0980	1964	Web of Science 1964-	24Feb2011	12	-
RS 6	Annals of Regional Science	Springer	0570-1864	1967	Web of Science 1967-	24Feb2011	11	10
RS 7	Journal of Urban Economics	Academic Press	0094-1190	1974	Web of Science 1974-	24Feb2011	1	-
RS 8	Environment and Planning A	Pion Ltd.	0308-518X	1969	Web of Science 1973-	24Feb2011	21	9
RS 9	International Regional Science Review	Sage Publications	0160-0176	1975	Web of Science 1982-	24Feb2011	5	-
RS 10	European Planning Studies	Routledge	0965-4313	1993	Scopus 1994-	24Feb2011	16	14
							236	121

* Top 10 Entrepreneurship journals according to the ABS Academic Journal Quality Guide 2010; and top 10 Regional Science journals according to Maier 2005.