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The social structure of entrepreneurship as a scientific field

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ABSTRACT

Entrepreneurship as a scientific field has grown significantly, irrespective of the measures used. In this article we raise the question: How can we understand the evolution and success of entrepreneurship as a scholarly field? In particular, we focus on the social structure of entrepreneurship scholars to explain (1) how they are becoming integrated into larger scholarly communities and (2) how they differ from the way scholars integrate within the field of innovation studies. Based on a unique database and responses from 870 entrepreneurship scholars, we demonstrate that entrepreneurship can be regarded as a phenomenon-driven field bound together by a shared communication system and social interaction rather than strong theoretical influences, i.e., a social scholarly community. We identify two broader social communities; one embedded in entrepreneurship conferences that includes a rather eclectic group of entrepreneurship scholars, and another related to entrepreneurship journals and entrepreneurship economics, characterized by a stronger domain orientation. In contrast, scholars in innovation studies tend to be more theory-driven and are bound together by their disciplinary and theoretical background, i.e., an intellectual scholarly community.

1. Introduction

The concept "entrepreneurship" has become a catch-word: politicians and policy-makers regard entrepreneurship as a solution to a range of societal problems, while in academia entrepreneurship has grown significantly and can be regarded as a successful and prosperous scholarly field. Entrepreneurship is taught at universities all over the world, university administrators talk about "entrepreneurial universities", entrepreneurship research has increased significantly and a large body of literature on different aspects of entrepreneurship can be found. In this article we will explore the question: How can we understand the evolution and success of entrepreneurship as a scholarly field? Many studies have analysed the cognitive aspects of the evolution of the field, for example by employing different forms of bibliometric analysis to synthesize the knowledge and methodologies used (see e.g., Special Issue of *Entrepreneurship Theory and Practice*, 2006). However, even if we can assume that entrepreneurship is influenced by "exemplary research", i.e., by those scholars who produce interesting research and attract others to build on their work (Aldrich and Baker, 1997), the field is not only shaped by those leading the cognitive development, but also by the social development of the field and the large number of scholars who read and cite the same literature, attend the same conferences, collaborate in joint projects, co-author articles and create social networks (Becher and Trowler, 2001; Cetina, 1999; Whitley, 2000).

Very little is known about the social structure of entrepreneurship as a scholarly field. There may be different reasons for this lack of attention to the social aspects of entrepreneurship. One main reason is that entrepreneurship did not emerge as a scholarly field due to a mandate to understand the phenomenon "for its own sake" – in a Humboldt model of research – but as an issue of importance for society with great practical and political relevance (Audretsch, 2014). As a consequence, entrepreneurship attracted scholars from many different disciplines and became a highly multidisciplinary field, leading to a very fragmented scholarly community, which makes it difficult to identify a well-defined group of scholars interested in entrepreneurship.

When it comes to analysis of the social structure of scholarly fields, Jan Fagerberg and Bart Verspagen conducted a pioneering study entitled "Innovation studies – The emerging structure of a new scientific field", published in *Research Policy* in 2009. In their study, they showed that innovation studies consist of a large number of (small) groups of interacting scholars and that these groups are brought together in several "cognitive communities" characterized by a specific combination of scholarly inspiration, meeting places and journals. The largest of these cognitive communities, the Schumpeter crowd, could be regarded as the core of innovation studies and the "mainstream" of the field. Fagerberg and Verspagen's study (2009) is not only interesting as a pioneering study focusing on the social structure of scholarly fields.

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Entrepreneurship and innovation studies are often regarded as tightly interlinked phenomena and necessary ingredients for creating growth and industrial renewal in society (Braunerhjelm et al., 2010). Thus, we can assume that entrepreneurship and innovation scholars are socially interlinked and collaborate in order to develop and disseminate knowledge on the dynamics of the economy. Therefore, it can be of interest to compare the social structure of entrepreneurship and innovation as scholarly fields.

Inspired by the Fagerberg and Verspagen (2009) study we explore the social structure of entrepreneurship as a scholarly field. We propose that the field of entrepreneurship is composed of a large number of individual scholars, united in broader scholarly communities by a common scientific outlook and a shared communication system. The aims of the study are (a) to explain how entrepreneurship scholars are becoming integrated into a larger community (and even creating a "discipline"), and (b) to compare the scholarly fields of entrepreneurship and innovation (based on the study by Fagerberg and Verspagen, 2009) and explain their similarities as well as the differences between them.

The article is structured as follows. In Section 2 we present a historical review of the evolution of entrepreneurship as a scientific field, followed in Section 3 by a literature review of social aspects of scholarly communities, which concludes with propositions that will be discussed in the rest of the article. Sections 4 and 5 present the survey of entrepreneurship scholars, where we will outline the methodology of the study and describe the community of entrepreneurship scholars. Our propositions are explored in Section 6 and compared with the scholarly community of innovation in Section 7. Finally, in Section 8 we draw conclusions and discuss the future development of the entrepreneurship field.

2. The evolution of entrepreneurship as a scientific field

Scientific knowledge has grown significantly in recent decades and many research fields have witnessed a huge increase in the number of scholars, conferences and published articles. Entrepreneurship is no exception and it could even be argued that compared with many other research fields, it has exhibited tremendous growth. In this section we will provide a historical review of the evolution of entrepreneurship. In our interpretation of the history of entrepreneurship we will use a model developed by Hambrick and Chen (2008), in which they argue that emerging research fields follow an institutionalization process including three overlapping phases: (1) differentiation of the field from existing fields, (2) resource mobilization to ensure a critical mass of scholars and control of the necessary resources, and (3) legitimacy building in the eyes of the academic establishment.

2.1. The roots of entrepreneurship studies

Although the function of entrepreneurship is as old as the existence of exchange and trade between individuals (Landström, 2005), it was not until the emergence of economic markets during the Middle Ages and the writing of Cantillon (1755/1999) that the concept gained interest among different authors. However, this initial discussion quickly came to a halt with the introduction of classical economic theory (Smith, 1776/1976), which laid the foundation for analysis of the way the market economy functions and resulted in the entrepreneur more or less disappearing from economic theory for a considerable period.

During the early twentieth century, entrepreneurship could be regarded as a fairly marginal topic in some mainstream disciplines such as economics, economic history, sociology and psychology (Landström and Benner, 2010). The development of our knowledge can mainly be attributed to individual scholars, of whom Joseph Schumpeter is probably the best known economist with an interest in entrepreneurship (Schumpeter, 1912, 1934), but also economists such as Knight (1921) and representatives of the Austrian School of Economics, for example, Mises, Hayek and later Kirzner (1973). In the 1940s a number of scholars anchored in economic history (e.g., Landes, Gerschenkron and Redlich) began to take an interest in entrepreneurship and subsequently scholars from psychology and sociology contributed to our knowledge on entrepreneurship, of whom McClelland (1961) is probably the best known.

2.2. The evolution of entrepreneurship studies

The marginalization of entrepreneurship in mainstream disciplines may be partly explained by the limited interest in society – economic development was associated with mass production, where large-scale systems and big corporations were seen as superior in terms of efficiency. However, in the 1970s and 1980s the societal context gradually changed in many Western societies, not least in the US (Carlsson et al., 2009), where a number of institutional reforms were introduced (e.g., the Bayh-Dole Act and a deregulation of financial institutions). In addition, several technological breakthroughs were emerging (e.g., DNA and the microprocessor), a globalization of the economy took place, two oil crises triggered uncertainty about large corporations' ability to create jobs and dynamics in society, and not least, entrepreneurship and industrial dynamics evoked strong political interest from politicians such as Ronald Reagan in the US and Margaret Thatcher in the UK.

2.2.1. Differentiation

The changes in the economy triggered an interest among scholars from different fields who started to conduct studies related to entrepreneurship and small business, thus entrepreneurship gradually started the journey towards becoming a field in its own right. Many pioneering studies on entrepreneurship emerged that focused on (1) the discovery of this "new" phenomenon, for example, pioneering empirical contributions by Birch (1979) on job creation, Brusco (1982) on "industrial districts" and regional development in Italy, Acs and Audretsch (1990) on the innovative role of new and small businesses, and (2) scholarly contributions that differentiated entrepreneurship from mainstream disciplines, for example, scholars claimed that existing fields were ill-equipped to focus on the changes occurring in the economy (Baumol, 1968; Casson, 1982).

These early achievements provided an intellectual foundation for the incorporation of entrepreneurship and small business into different research projects, and many scholars from different fields (particularly various subfields of management studies) entered this promising field of research. These studies also contributed to the successful differentiation of the field from other disciplines – promoted by the media and by policy-makers' view that a better understanding of entrepreneurship can help to solve various societal problems, by for example, creating new jobs, new companies and industries, as well as advancing regional development. As a consequence, legitimacy for entrepreneurship was anchored in "external" stakeholders (e.g., practitioners, policy-makers and politicians).

2.2.2. Mobilization

Mobilization is a major factor within emerging fields in order to attract a larger group of scholars and gain control over the resources needed for collective action (Hambrick and Chen, 2008). In the 1970s and 1980s, the research community was fairly fragmented and individualistic – the evolution of the field depended on individual initiatives. However, several initiatives were taken to stimulate communication between scholars in this fragmented and individualistic research community, for example, through the initiation of professional organizations (e.g., the Entrepreneurship Division of the Academy of Management, 1986, the European Council for Small Business, 1988), as well as the launch of academic conferences (e.g., the UK Small Firms' Policy and Research Conference, 1979, the Babson College Entrepreneurship Conference, 1981, Research on Entrepreneurship Conference, 1986), and the launching of scientific journals (e.g.,

Entrepreneurship Theory and Practice, 1975/1988, *Journal of Business Venturing*, 1985, *Entrepreneurship and Regional Development*, 1989, and *Small Business Economics*, 1989).

The building of a strong infrastructure within the field escalated in the 1990s and it became a "melting pot" for scholars from various research fields, who introduced new research questions, used different methodological approaches and imported different concepts and theories into the field. Collaboration between researchers also increased through professional organizations and conferences, enhanced publication opportunities as a result of the introduction of a large number of new scientific journals, and a growing number of education programmes (Aldrich, 2012). In addition, foundations and funding sources for entrepreneurship studies became available, for example, the National Federation of Independent Business and the Kauffman Foundation in the US and the OECD and different policy-related agencies in Europe.

The heterogeneous scholarly community within the field also had consequences for its cognitive development during the 1990s. The field was characterized by a large scale migration of scholars into the field, but also a high degree of mobility of scholars in and out of the field, i.e., researchers whose entrepreneurship publication was a one-off event. The research within the field showed a strong empirical focus with scholars trying to understand the phenomenon from many different angles. Taken together, this made the field of entrepreneurship research highly fragmented and Zahra (2005) described it as loosely connected with a "mosaic of issues to be explored" (p. 254).

2.2.3. Legitimacy

In order to ensure a position in the academic system, an academic field must be considered legitimate by scholars from other fields of research. Over the decades, entrepreneurship researchers have worked hard to achieve academic legitimacy. In early days of entrepreneurship research, legitimacy was mainly created by external forces, not least policy makers and politicians but also other external stakeholders (media, teachers, etc.), and entrepreneurship was regarded as a practical and relevant field. The significant increase in the academic legitimacy of the field was partly triggered by the prevailing context of business schools around the world, i.e., business schools moved towards increased marketization and managerialism including a stronger focus on accreditations and rankings based on top journal publications (Harley et al., 2004; Pettigrew et al., 2014), but also because entrepreneurship as a scholarly field was becoming more and more institutionalized. Hambrick and Chen (2008) argue that legitimacy building is enhanced if the emerging field emulates the norms and standards of more established fields, which often means adopting a "normal science" approach, as has been the case with entrepreneurship studies. Over recent decades, the field has been strongly dominated by robust and theory-based quantitative studies, relying on surveys, archival data and sophisticated statistical techniques for data analysis (Audretsch, 2012; Davidsson, 2016). As a consequence, the legitimacy of the field has shifted from external stakeholders to an increased academic legitimacy.

2.3. Influential entrepreneurship works

Many studies have reviewed the development of entrepreneurship knowledge – some based on bibliometric approaches (Cornelius et al., 2006; Gregoire et al., 2006; Schildt et al., 2006; Teixeira, 2011). The results that emerged from various bibliometric analyses indicating the key works in entrepreneurship research are partly dependent on the indexes used (e.g., Social Sciences Citation Index or Scopus) and the time frame of the analysis. The most influential entrepreneurship works that emerged from three analyses based on somewhat different indexes and time frames are presented in Table 1. In particular, it is worth noting the differences between the analyses. Landström et al. (2012) is based on the references in state-of-the-art books, which focus more strongly on key references in the evolution and domain of the field, while Teixeira (2011), and Busenitz et al. (2014) are based on citation analyses of entrepreneurship and management journals, thus have a stronger focus on more recent contributions at the research frontier.

The analysis of the influential works in entrepreneurship research (Table 1) shows that the field is still in a "pre-theorizing" stage. First, in emerging research fields there is often an ongoing discussion concerning the domain of research, which is certainly the case among entrepreneurship scholars. In this discussion entrepreneurship scholars use "classical studies" in order to determine the function of entrepreneurship in the creation of new markets (e.g., Schumpeter, Knight, Kirzner) as well as the characteristics of the entrepreneur as an individual (e.g., McClelland). In addition, works that more explicitly discuss the domain issue within the field also become influential (e.g., Gartner, Shane and Venkataraman). Second, in the absence of their own concepts and theories entrepreneurship scholars have borrowed many theories from other research fields. The strong influence of works by Barney, Jensen and Meckling, Penrose, Cohen and Levinthal, and Miner et al. could be regarded as an expression of the need to borrow theories from other fields, but also demonstrate the strong influence of management scholars. Finally, in order to effectively build field-specific theories, it is important to have a detailed understanding of the phenomenon (Eisenhardt, 1989) and many influential works in entrepreneurship consist of empirical studies that explore different aspects of entrepreneurship (e.g., Bhidé, Storey, Davidsson and Honig, Zahra et al., and Autio et al.).

It could also be argued that the influential works in entrepreneurship research have changed over time (Landström et al., 2012). For example, entrepreneurship scholars tend to draw more and more inspiration from works authored by scholars associated with the field itself (Teixeira, 2011) – indicating a higher degree of scientific autonomy and increased liberation from mainstream disciplines such as management and economics (Alvarez et al., 2010). Field-specific concepts and theories have started to emerge within the field – the influence of Sarasvathy and Shane in Table 1 could be regarded as an example.

2.4. Entrepreneurship and innovation: one or two fields?

In a cognitive sense, entrepreneurship and innovation have common roots in Schumpeter (1934, 1942) and interrelated works. The knowledge bases of both fields emerged after the Second World War, reflecting the greater societal recognition of innovation and entrepreneurship as important for economic growth and the emergence of the "knowledge society". The field of innovation emerged in the 1950s and 1960s with a strong resource-basis in the policy structure (e.g., RAND Corporation in the US, the Federation of British Industry in the UK and OECD located in Paris) and a strong knowledge base in disciplines such as sociology and economics (Fagerberg et al., 2012b). Despite common cognitive roots, the fields of entrepreneurship and innovation seem to have drifted apart over recent decades and there are few overlaps in their knowledge platforms (Bhupatiraju et al., 2012; Landström et al., 2015; Shepherd and Patzelt, 2017), i.e., the fields tend to focus on different problems and issues, relying on different core scholars and key works. For example, Fagerberg et al. (2012b) found that only twelve (of which two were the common roots in Schumpeter, 1934, 1942) of the 100 most cited works in both fields overlapped and apart from Schumpeter, only two works – Nelson and Winter (1982) and Saxenian (1994) – were in the top-20 in both fields.

The social structure of the scholarly communities also seems to differ between the two fields. Historically, innovation has a tradition of strong research units, that first emerged in the 1960s in research institutes such as the Research Policy Institute in Sweden and SPRU in the UK, followed by other influential research institutes (e.g., IKE group in Denmark, MERIT in the Netherlands and CIRCLE in Sweden). Entrepreneurship is far more fragmented and individualistic, thus it is

Table 1
Influential entrepreneurship works.

	Landström et al. (2012)	Teixeira (2011)	Busenitz et al. (2014)
Database (sources of references)	Twelve state-of-the-art books on entrepreneurship	Seven entrepreneurship journals (ETP, JBV, SBE, ERD, FBR, ISBJ, and JSBM)	Seven management journals (AMJ, AMR, SMJ, JOM, OS, MS, and ASQ)
Time frame	1982–2006	2005–2010	2000–2009
Index	Social Science Citation Index (SSCI) of Web of Science	Scopus	ABI-Inform Database
1	Schumpeter (1934)	Shane and Venkataraman (2000)	Shane and Venkataraman (2000)
2	Shane and Venkataraman (2000)	Schumpeter (1934)	Sarasvathy (2001)
3	Shane (2000)	Barney (1991)	Miner et al. (2001)
4	Knight (1921)	Jensen and Meckling (1976)	Shane (2000)
5	Schumpeter (1942)	Penrose (1959)	Zahra et al. (2000)
6	Gartner (1988)	Granovetter (1985)	Lee et al. (2001)
7	Bhidé (2000)	Cohen and Levinthal (1990)	Amit and Zott (2001)
8	Kirzner (1973)	Storey (1994)	Peng (2003)
9	McClelland (1961)	Davidsson and Honig (2003)	Lu and Beamish (2001)
10	Storey (1994)	Shane (2000)	Autio et al. (2000)

not easy to identify strong research units leading the development of the field. Despite the fact that Clausen et al. (2012) found that a large proportion (44.1%) of the local research units within the two fields tend to focus on both innovation and entrepreneurship, in terms of social structure they have tended to develop in different directions (Fagerberg et al., 2012b). This has led to relatively distinct scholarly communities with their own meeting places, professional associations (Gartner et al., 2006) and publication outlets, although there are some general outlets, for example, *Research Policy* and the *Strategic Management Journal* that seem to be important in both fields (Thongpapani, 2012).

Following the argumentation in Fagerberg et al. (2012b; see also Landström et al., 2015) we can conclude that even though innovation and entrepreneurship have similar cognitive roots in Schumpeter, they can be regarded as multidisciplinary fields that increasingly evolved in different directions both regarding recent contributions to core knowledge and their scholarly communities.

3. Social structure and networks of scholarly communities

3.1. Social structure of scientific fields

As indicated above, scientific fields are not only shaped by the scholars who lead their cognitive development, but also by the social activities undertaken by the large number of scholars who participate within the field, i.e., the social development of the field is of importance. The general literature on new scientific fields (see e.g., Becher and Trowler, 2001; Cetina, 1999; Crane, 1972) highlights the need for a social infrastructure within the field, i.e., it is important to create a communication system (e.g., conferences and journals), doctoral programmes, international research arenas, etc., as otherwise a scientific field will have difficulty surviving (Whitley, 2000) due to lack of knowledge accumulation and the absence of legitimacy in the eyes of the academic world (Fagerberg and Verspagen, 2009).

In the evolution of entrepreneurship as scientific field, Aldrich (2012) emphasizes the collective actions taken by the countless number of scholars, groups and associations that have been important for building a social infrastructure. He argues that six forces have been instrumental in creating the institutional infrastructure of entrepreneurship as a scholarly field: (1) social networking mechanisms that have facilitated the connections between scholars, for example, professional associations and conferences, (2) an increased number of publication opportunities within the field, (3) training and mentoring, for example, through PhD programmes and professional organizations, (4) an increased number of funding sources, (5) mechanisms to recognize and reward individual scholarly contributions, for example, awards related to professional associations and conferences, and (6) globalizing forces that have moved entrepreneurship from a small group of isolated scholars in the 1970s to an international community today. To establish a coherent scientific discipline these forces may contribute to the building an institutional infrastructure that creates incentives for members to focus on common problems, value the same way of researching issues, disseminating knowledge, overcoming resistance from scholars in other fields and recruiting outsiders to join the field (Aldrich, 2015).

3.2. Networks in scholarly communities

Strong and weak ties tend to have different roles in scholarly interaction (Granovetter, 1973). Strong ties can be expected to bind scholars together in relatively small groups characterized by intense interaction between group members. Granovetter argues that an individual's strong ties create social cliques in which the flow of information is assumed to contain mainly redundant knowledge that is already familiar to the receiver. In the context of scholarly communities it has been demonstrated in a large number of studies (Crane, 1972; de Solla Price, 1963; Fagerberg and Verspagen, 2009) that scientists tend to work together in relatively small and dense networks, often centred around a few prominent scholars who play an important role in creating scholarly inspiration, providing resources and acting as "gatekeepers" to external networks (Fagerberg and Verspagen, 2009).

The social and collaborative networks of entrepreneurship scholars have been studied by Reader and Watkins (2006, see also Aldrich, 2015), who revealed that (1) a large proportion of scholars had co-authored articles together with their close intellectual colleagues, although unsurprisingly, research collaboration often occurs in senior-junior (PhD student) relationships, (2) the field consists of many such small networks of tighter, more resilient groups of scholars who share a direct affinity with each other and (3) there is a strong association between the cognitive ties (reflected in bibliometric analysis) and the social network ties among scholars within the field – an argument often taken on trust by bibliometricians – and few scholars claimed membership of more than one such network, i.e., scholars in entrepreneurship seem rather narrowly focused in their relationships.

However, the main focus of this study is not whether such small groups of interacting scholars with strong ties exist, but rather how individual scholars in these groups link up with one another and create networks of weak ties to form something that can be characterized as a distinct scientific field. According to Granovetter (1973), weak ties are more effective than strong ones in terms of disseminating information, i.e., the strength of the weak ties lies in the likelihood that they bridge structural gaps between cliques and supply more new information (Burt, 1992, 2000; Granovetter, 1973). Thus, weak ties have the

potential to bring scholars together into a larger scholarly community, i.e., such ties tend to embed individual scholars in a broader scholarly community with shared cognitive frameworks, sources of scholarly inspiration and channels of communication, such as journals and meeting arenas.

3.3. Propositions

Although entrepreneurship as a scientific field has become an international community of scholars based on a strong institutional infrastructure, the social networks of scholars still seem to consist of a large number of small, close-knit groups (Reader and Watkins, 2006). It is therefore unclear whether there is a distinct "discipline" called entrepreneurship or merely a collection of scholars with different disciplinary origins studying similar phenomena within many diverse small and dense social network groups (similar conclusions are drawn in Aldrich, 2015). Thus, the challenge of our study is to explore the extent to which individual scholars in these small groups link up with one another by means of a common scientific outlook and shared communication system to form a larger community of entrepreneurship scholars and create a coherent scientific field. In this respect, we formulate the following proposition:

Proposition 1. *Individual entrepreneurship scholars are bound together in broader scholarly communities by a common scientific outlook and shared communication system, including journals and meeting places.*

As shown in subsection 2.4, entrepreneurship and innovation studies have partly similar historical roots (Fagerberg et al., 2012a; Landström et al., 2012) in the sense that both fields are anchored in a relevance-oriented tradition – entrepreneurship in business practice and innovation in a policy tradition – and both fields are strongly multidisciplinary. However, there are also some important differences between the fields (Fagerberg et al., 2012b; Landström et al., 2015), not least when it comes to the scholarly background of the scholars involved – entrepreneurship has its basis in an eclectic discipline of management, whereas innovation is rooted in more strongly theoretically-based disciplines such as economics and sociology. In view of the historical roots of entrepreneurship and innovation, we can assume that their scholarly communities will have different characteristics, which might also explain why the two fields have become more and more distant from each other. Based on this comparison we make the following proposition:

Proposition 2. *Entrepreneurship scholars will to a larger extent be grouped together based on the social structures of the field, i.e., attendance at particular conferences and/or appreciation of certain journals, whereas innovation scholars will be grouped together more on the basis of their theoretical backgrounds and sources of scholarly inspiration.*

4. Exploring the community of entrepreneurship scholars

4.1. Web-based survey

Entrepreneurship as a scholarly field is highly fragmented and multidisciplinary and as a consequence, it is difficult to identify those scholars who are active within the field. To identify respondents in our study we made use of the participant lists of a range of relevant conferences, for example, the ICSB World Conference, the Babson Conference, the RENT Conference and the ESU Conference. Given that the authors of this study were both affiliated to two universities in Europe, we made a particular effort to avoid a bias in the geographical distribution of the respondents and thus searched for scholars who participated at larger international entrepreneurship conferences. From the participant lists we created a database of the 3338 scholars who attended the various conferences. The scholars in the final database came from 90 countries and six continents. A majority (58%) came from Europe (of whom 9% were from the UK and 7% from Germany, which were the European countries with the largest number of scholars in the database), followed by North America with 30%, Asia 7%, Oceania 2%, South America 2% and Africa 1%.

When the web-based survey closed in June 2016, 896 scholars had responded, implying a response rate of 27%. However, 26 did not consider themselves entrepreneurship scholars, meaning that we used the answers from 870 respondents. Due to the difficulties associated with obtaining high response rates in web-surveys, we find the response rate fairly satisfactory. However, the questionnaire was extensive and required a great deal of work on the part of the respondents, leading to some internal drops-outs.

We also performed a non-respondent analysis to test for possible biases concerning those who did not respond to our survey. The non-respondent analysis compared the first wave of respondents with the second and third waves, assuming that late responders would have strong similarities with those who did not respond at all (Armstrong and Overton, 1977). Our results indicated no differences in terms of age, academic position and geographical distribution (with regard to continents) among those who responded to our survey.

4.2. Questionnaire

Respondents who identified themselves as entrepreneurship scholars (either today and/or in the past) where asked to complete a fairly detailed questionnaire comprising over 40 questions pertaining to: (1) scholarly background, including questions about the respondents' position and work distribution, their PhD degree and fields of interest, and (2) their networks, which included questions about the respondents' collaborators and the reasons behind the collaboration, but also their sources of scholarly inspiration, important publishing outlets and their favourite meeting places (conferences).

4.3. Analysis

The analyses in the study were made in three steps. First, we employed descriptive statistics in order to gain an overview of the characteristics of our sample. This analysis is presented in Section 5. Second, we identified the main communities of entrepreneurship scholars shaped as a result of attending the same conferences, sharing the same scholarly inspiration and publishing in journals with a similar topic of interest. We conducted a hierarchical cluster analysis using Ward's method for linking cases. The clusters of scholarly communities in entrepreneurship are presented in Section 6. Finally, we compared the scholarly communities of entrepreneurship and innovation using the information about innovation retrieved from the study by Fagerberg and Verspagen (2009). The results of the comparison are presented in Section 7.

5. Entrepreneurship scholars: who are they and what do their networks look like?

5.1. The scholars within the field of entrepreneurship

Our survey respondents come from different geographical contexts, of which Europe (69%) and North America (21%) were dominant. Taking a closer look at the respondents from individual countries, respondents from the US dominate (18.0%), followed by scholars from the UK (7.9%), France (7.5%), Sweden (7.5%) and Germany (5.8%). The entrepreneurship community is dominated by males (57.8%) and the scholars within the field are fairly young with the largest age-group being 30–39 years (29.7%), followed by 40–49 years (29.1%). Most of the respondents (72.2%) hold a PhD degree. A large proportion (25.3%) of the scholars have their PhD in entrepreneurship (and innovation), whereas business administration is the main disciplinary background of the respondents (43.6%), followed by economics (15.2%). When it

comes to academic experience, 37.6% of the respondents had between 11 and 20 years of experience in academia and 36.7% less than 10 years – once more indicating that the field is rather young. The experience in academia is also shown by the distribution of academic positions: 28.1% are Full Professors, 43.5% Associate and Assistant Professors, 5.6% Post Docs and 13.8% PhD students.

5.2. The characteristics of the scholarly networks in entrepreneurship

To explore the scholarly networks within the field of entrepreneurship we took into account the information supplied by the respondents on their scholarly inspiration, meeting places and publication channels.

5.2.1. Scholarly inspiration

The respondents were asked: Who do you consider to be the most important people in your frame of reference? and requested to name three scholars who had inspired their work. Our analysis revealed that entrepreneurship is an incredibly fragmented field. As many as 414 different scholars were mentioned as being the most important people in their frame of reference. Those mentioned in more than 1.0% of the responses are presented in Table 2. Not surprisingly, Schumpeter is an important source of inspiration for entrepreneurship scholars, mentioned by 4.8% of the respondents. In addition, many well-known entrepreneurship scholars such as Shane, Gartner, Sarasvathy, Davidsson, Aldrich, Audretsch, Shepherd and Zahra were among the "top-inspirers". Compared to bibliometric analysis (e.g., Teixeira, 2011) many of the most cited scholars are also the top-ranked inspiration sources in our study, but the results show that the sources of scholarly inspiration are more widely distributed than could be expected from different citation analysis. Thus, more surprising than the rankings of the names is the low proportion of the entrepreneurship scholarly community that has been inspired by these "top-inspirers" and the large number of different scholars mentioned as important "inspirers" of their works.

5.2.2. Meeting places

If the respondent had attended any international conferences or meeting places over the previous two years, she/he was asked: Which conferences and meeting places do you usually attend? It was possible to mention three meeting places with the "best" meeting place first. In total, 205 different conferences and meeting places was mentioned. The Academy of Management Annual Meeting (AOM) is clearly the most attended conference among entrepreneurship scholars (19.0%), followed by more specific entrepreneurship and small business conferences such as the Babson Conference (12.8%), the RENT Conference (10.4%) and the ICSB World Conference with a somewhat smaller attendance rate of 6.5%. These top meeting places are followed by a large number of more general management conferences such as the SMS Conference, EURAM, EGOS and the AIB Conference, as well as more specific entrepreneurship and small business conferences, for example, USASBE, ISBE and the ECIE Conference.

5.2.3. Publication channels

If the respondent had published a paper on entrepreneurship in an academic journal over the previous two years, she/he was asked the following question: In the last two years, which journals have you used as an outlet for your top three works on entrepreneurship? In total, 231 different journals were mentioned. The most frequently used were the leading journals in entrepreneurship, comprising *Entrepreneurship Theory and Practice* (ETP), *Journal of Business Venturing* (JBV) and *Small Business Economics* (SBE), followed by a second group including the *Journal of Small Business Management* (JSBM), *Entrepreneurship and Regional Development* (ERD), *International Small Business Journal* (ISBJ) and the *Strategic Entrepreneurship Journal* (SEJ). Several other entrepreneurship in addition to management journals were also mentioned, making it obvious that entrepreneurship scholars tend to publish in a broad range of differently ranked journals.

Table 2 presents the most frequent answers – those mentioned by at least 1.0% of the respondents – pertaining to scholarly inspiration, meeting places and publication channels.

Table 2
Most important scholarly inspiration, meeting places and journals (above 1%).

Rank		Share (%)
	Scholarly inspiration	
1	Joseph Schumpeter	4.8
2	Scott Shane	2.7
3	William Baumol	2.2
4	William Gartner	2.2
5	Saras Sarasvathy	2.1
6	Per Davidsson	1.8
7	Howard Aldrich	1.7
8	David Audretsch	1.6
9	Dean Shepherd	1.6
10	Shaker Zahra	1.4
11	Israel Kirzner	1.3
12	Peter Drucker	1.2
13	Zoltan Acs	1.0
	Meeting places	
1	Academy of Management Annual Meeting (AOM)	19.0
2	Babson College Entrepreneurship Research Conference (BCERC)	12.8
3	Research in Entrepreneurship Conference (RENT)	10.4
4	International Council for Small Business World Conference (ICSB)	6.5
5	Strategic Management Society Annual International Conference (SMS)	3.3
6	European Academy of Management Conference (EURAM)	2.7
7	US Association for Small Business and Entrepreneurship Conference (USASBE)	2.7
8	Institute for Small Business and Entrepreneurship Annual Conference (ISBE)	2.4
9	European Group for Organizational Studies (EGOS)	1.9
10	Danish Research Unit on Industrial Dynamics Conference (DRUID)	1.7
11	European Conference on Innovation and Entrepreneurship (ECIE)	1.4
12	European Summer University Network on Entrepreneurship (ESU)	1.4
13	Academy of International Business (AIB)	1.2
14	ECSB Entrepreneurship Education Conference (3E)	1.2
15	Australian Centre for Entrepreneurship Research Exchange Conference (ACERE)	1.0
16	Diana International Research Conference	1.0
17	International Family Enterprise Research Academy Annual Conference (IFERA)	1.0
	Journals	
1	Entrepreneurship Theory and Practice (ETP)	9.0
2	Journal of Business Venturing (JBV)	8.6
3	Small Business Economics (SBE)	8.2
4	Journal of Small Business Management (JSBM)	4.7
5	Entrepreneurship and Regional Development (ERD)	4.5
6	International Small Business Journal (ISBJ)	3.8
7	Strategic Entrepreneurship Journal (SEJ)	2.8
8	International Journal of Entrepreneurial Behavior and Research (IJEBR)	1.8
9	International Entrepreneurship and Management Journal (IEMJ)	1.6
10	International Journal of Entrepreneurship and Small Business (IJESB)	1.6
11	Journal of Business Research (JBR)	1.5
12	Research Policy (RP)	1.5
13	Academy of Management Review (AMR)	1.3
14	Family Business Review (FBR)	1.2
15	Strategic Management Journal (SMJ)	1.2
16	International Journal of Gender and Entrepreneurship (IJGE)	1.1
17	Journal of Technology Transfer (JTT)	1.1
18	Academy of Management Journal (AMJ)	1.0
19	Journal of Developmental Entrepreneurship (JDE)	1.0
20	Journal of Small Business and Enterprise Development (JSBED)	1.0

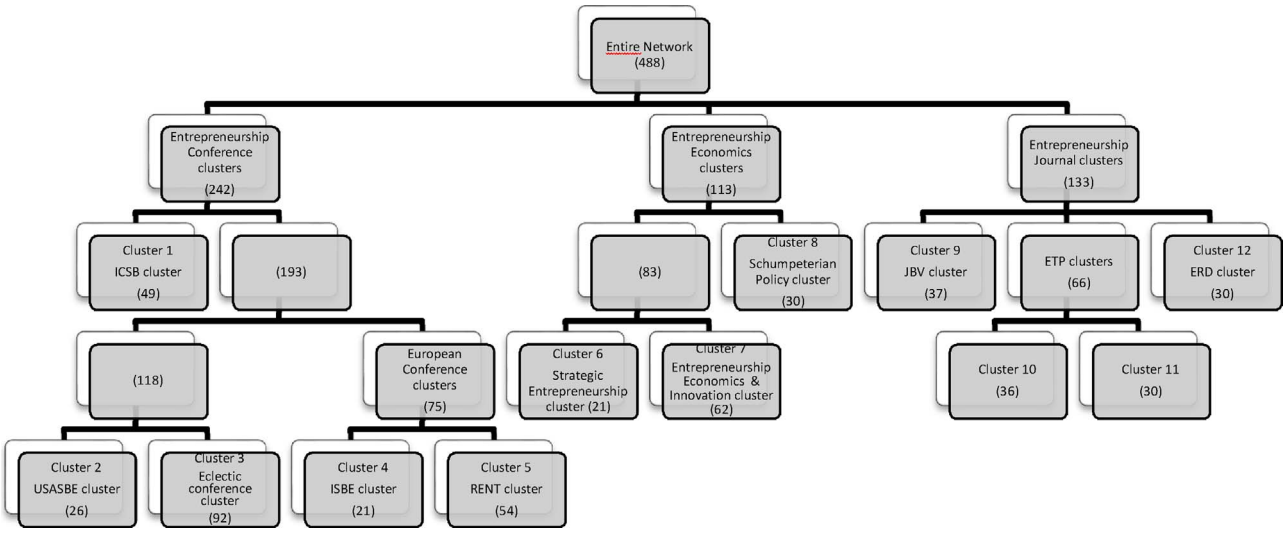

Fig. 1. Cluster hierarchy.

6. Social networks among entrepreneurship scholars

6.1. The role of "weak ties"

From our analysis, we can conclude that the community of entrepreneurship scholars is heavily fragmented and the question is how all these individual scholars are embedded into one or more distinguishable scholarly communities (Proposition 1). To explore this issue we used hierarchical cluster analysis, i.e., based on our knowledge about the respondents' scholarly inspiration, favourite meeting places and publication channels, where individuals with similar scores on corresponding "weak ties" will be grouped together into larger wholes.

Fig. 1 presents the results of the cluster analysis, illustrating up to level 4 of the cluster breakdown. On the top level we can identify three main clusters. One cluster that we labelled "Entrepreneurship Conference" includes a broader community of entrepreneurship scholars bound together by their attendance at certain meeting places and conferences. This is a rather large group of scholars comprising 242 respondents, of whom the majority are European. A second main cluster is labelled "Entrepreneurship Economics" as it includes a group of scholars bound together by their disciplinary background in strategy and economics. This cluster is somewhat smaller than the others, with 113 respondents mainly located in North America and northern Europe. Finally, we identified a group of 133 respondents who distinguish themselves by the journal outlets that they find the most attractive, which we therefore labelled the "Entrepreneurship Journal" cluster.

The cluster analysis revealed 12 different sub-clusters. However, it was difficult to identify the dividing variables between clusters 10 and 11 and therefore these two clusters have been merged. Table 3 lists some characteristics of the eleven clusters. In the presentation of the clusters below we report the most important (if any) source of inspiration, meeting places and journals, i.e., what the respondents in the cluster value most. In addition, we report the size of the cluster and its disciplinary and geographical orientation.

The Entrepreneurship Conference cluster includes sub-clusters 1–5. An interesting observation is that none of these clusters exhibit any strong scholarly inspiration from a particular source. On the contrary, they are very fragmented in terms of their scholarly inspiration. The different clusters can be described as follows:

- Cluster 1: This is a fairly large community of scholars that mainly meets at the ICSB World Conference, i.e., the main conference within the organization International Council for Small Business (ICSB). The ICSB World Conference is a rather broad conference in terms of the topics discussed and usually includes academic scholars as well as practitioners and policy-makers. The respondents in this community tend to publish in a broad range of journals and have a disciplinary bias towards management as well as a geographical concentration in northern Europe.
- Cluster 2: This community, which is related to the US affiliation of the ICSB organization and its conference USASBE (US Association of Small Business and Entrepreneurship), is fairly small, consisting of just 26 respondents. This group of mainly management scholars is found in North America and its members tend to publish in the *Journal of Small Business Management* (JSBM).
- Cluster 3: A large (92 respondents) and eclectic group that tends to attend a variety of different entrepreneurship and small business conferences. The community is rather fragmented when it comes to publication channels, disciplinary background (it is a multidisciplinary cluster) and geographical location.
- Cluster 4: The multidisciplinary community of scholars in this cluster has a strong British dominance and is bound together by participation in the UK small business and policy conference, the so-called Institute for Small Business and Entrepreneurship (ISBE) Conference. In other respects the community is very fragmented, for example, when it comes to the most popular journal outlets and disciplinary background.
- Cluster 5: This is a rather large scholarly community (54 respondents) in which the scholars attend the RENT Conference – a conference organized by the European Council of Small Business (ECSB), i.e., the European affiliation of the ICSB. Similar to cluster 4, it is difficult to find journal outlets of particular interest among the scholars. The community is highly multidisciplinary, but obviously with a European bias (mainly northern Europe).

The Entrepreneurship Economics clusters are divided into three sub-communities (clusters 6–8) that we labelled a Strategic Entrepreneurship cluster, an Entrepreneurship Economics and Innovation cluster and a Schumpeterian Policy cluster. Compared to the scholarly communities in the previously mentioned clusters, the scholars in the three Entrepreneurship Economics clusters have a stronger theoretical anchor as well as a stronger focus on some important journal outlets. The clusters can be characterized as follows:

- Cluster 6: This is a rather small community comprising 21 respondents with an interest in "strategic entrepreneurship" issues. It is difficult to find any strong scholarly influence on this group of scholars as their works tend to be inspired by different scholars.

Table 3
Characteristics of the main scholarly communities in entrepreneurship.

	Entrepreneurship Conference clusters (242)					Entrepreneurship Economics clusters (113)			Entrepreneurship Journal clusters (133)			
Clusters	1	2	3	4	5	6	7	8	9	10	11	12
Name	ICSB cluster	USASBE cluster	Eclectic conference cluster	ISBE cluster	RENT cluster	Strategic Entrepreneurship cluster	Entrepreneurship Economics and Innovation cluster	Schumpeterian Policy cluster	JBV cluster	ETP clusters		ERD cluster
Number of scholars	49	26	92	21	54	21	62	30	37	66		30
Most important sources of inspiration	None	None	None	None	None	None	Schumpeter Baumol	Schumpeter Audretsch Acs	None	None		Gartner (Aldrich)
Most important conferences	ICSB (RENT)	USASBE (AOM) (ICSB)	Large number of different conferences	ISBE (RENT)	RENT	SMS AOM	AOM	None	AOM	Babson AOM		AOM RENT (Babson)
Most important journals	None	JSBM	None	None	None	SEJ	None	SBE	JBV	ETP (JSBM)		ERD
Most important disciplines	Management	Management	None	None	None	Management	Management	Economics	None	Management (Entrepreneurship)		Management
Most important locations	Northern Europe	North America	Northern Europe	the UK	Northern Europe	North America	Northern Europe	Northern Europe	North America	Northern Europe		Northern Europe
						Northern Europe	(North America)		Northern Europe	North America		

However, they share a strong inclination to attend conferences such as the Strategic Management Society (SMS) and the Academy of Management (AOM), as well as being particularly keen on publishing in the *Strategic Entrepreneurship Journal* (SEJ). Most of the scholars in this community have a management background and their geographical location is North America and northern Europe.

- Cluster 7: The scholars in this community have a topical interest in entrepreneurship economics and innovation. Their main source of scholarly inspiration comes from economists such as Joseph Schumpeter and William Baumol and they tend to meet at the Academy of Management (AOM). However, there are no particular journals that can be regarded as their main outlet. Most scholars have a disciplinary background in management and can be found in northern Europe and North America.
- Cluster 8: This community of scholars could be defined a Schumpeterian policy-oriented cluster, as its members are greatly inspired by the writings of Joseph Schumpeter, but also those of David Audretsch and Zoltan Acs. The scholars within this community do not seem to be attracted to any particular types of conference, but attend different kinds. When it comes to journals, the scholars tend to show a preference for the *Small Business Economics* (SBE) journal. The members of the community are predominately economists by training and geographically concentrated in northern Europe.

Among the Entrepreneurship Journal cluster we can identify three different scholarly sub-communities (clusters 9–12) related to the *Journal of Business Venturing* (JBV), *Entrepreneurship Theory and Practice* (ETP) and *Entrepreneurship and Regional Development* (ERD). The journals have some different characteristics when it comes to the preferred topics and methodological approaches. In addition, the various communities exhibit differences in their appreciation of conferences, but no strong appreciation of particular scholarly inspirations. The communities can be described as follows:

- Cluster 9: The members of this group of scholars highly favour the *Journal of Business Venturing* (JBV). The journal can be characterized as focusing on quantitative methodological approaches to a rather broad range of entrepreneurship issues. The number of scholars in this multidisciplinary group is not very large and they can be found in North America and northern Europe. The community tends to meet at the Academy of Management (AOM), but it is not possible to find a scholarly inspiration source that is of particular importance for them, indicating that they cover a broad range of entrepreneurship issues in their research.
- Clusters 10–11: This community contains a rather large group of scholars who greatly appreciate the *Entrepreneurship Theory and Practice* (ETP) journal, which can be characterized as having a strong theoretical and conceptual focus and targeting a broad range of entrepreneurship issues. Similar to cluster 9, it is difficult to find a scholarly inspiration source of particular importance in this community. However, the disciplinary background of the scholars is mainly management, but also to some extent entrepreneurship. The scholars in this community are from northern Europe and North America and their favourite meeting places are the Babson Conference (BCERC) and the Academy of Management (AOM), which are US dominated entrepreneurship conferences.
- Cluster 12: We labelled this group of scholars the ERD cluster due to the fact that they tend to appreciate the *Entrepreneurship and Regional Development* (ERD) journal. The ERD is a European journal covering many topics of particular interest in Europe. It focuses on broad, somewhat aggregated small business research issues (but also entrepreneurship issues), with a rather eclectic view on methodological approaches. There is a strong northern European bias in the community, where the members have a management background. Compared to many other clusters, the members of this community

tend to particularly value inspiration from William Gartner and Howard Aldrich, as well as appreciating meeting places such as the Academy of Management (AOM), the RENT Conference and to some extent the Babson Conference (BCERC).

The cluster analysis shows that we can identify a large, eclectic and geographically diverse group of scholars in the Entrepreneurship Conference cluster, who lack focused sources of scholarly inspiration and with few preferred outlets, except for the *Journal of Small Business Management* (a journal linked to the ICSB organization). The community is bound together through conferences related to the "ICSB sphere", such as the ICSB World Conference, USASBE and RENT. On the other hand, in the Entrepreneurship Journal cluster as well as the Entrepreneurship Economics cluster we can identify scholars who are linked to conferences such as the Academy of Management (AOM), the Babson Conference (BCERC) and the Strategic Management Conference (SMS) and prefer to publish their works in outlets such as the *Journal of Business Venturing*, *Entrepreneurship Theory and Practice*, *Small Business Economics* and the *Strategic Entrepreneurship Journal.* In particular, the Entrepreneurship Economics clusters contain scholars inspired by Schumpeter, Baumol, Audretsch etc.

6.2. Links between clusters

Based on the weak ties of scholarly inspiration, favourite meeting places and publication channels, the analysis has so far revealed that entrepreneurship scholars are clustered together in three major scholarly communities: Entrepreneurship Conference, Entrepreneurship Economics and Entrepreneurship Journal. The next step is to analyse how these scholarly clusters are linked together, thus creating a larger scholarly community of entrepreneurship scholars that might even constitute a "discipline". In order to show the different roles that weak ties (scholarly inspiration, meeting places and journals) may play in linking the communities together, we have visualized them in three figures (Figs. 2–4). The graphs have been produced using Netdraw and are based on the spring-embedding algorithm.

In Fig. 2 we have changed the focus from the clusters of entrepreneurship scholars to the role of the weak ties that connect the clusters, irrespective of the importance of such ties, i.e., we focus on the nodes located between the clusters. As can be seen from the figure, there are many scholars, meeting places and journals that serve as a link between the scholarly communities, not least between the Entrepreneurship Conference clusters and Entrepreneurship Journal clusters, but also weak ties that connect all three scholarly communities.

In order to more closely investigate which ties are of greater importance for connecting the scholarly communities in entrepreneurship, we have illustrated the networks when the least important ties are removed. Fig. 3 illustrates all scholarly inspiration, meeting places and journal outlets that had a value above 1% (in accordance with Table 2). The lines indicate the importance of the weak ties, with thicker lines implying a higher value. Fig. 3 shows that the integrating mechanisms between the clusters are particularly evident among the meeting places and journal outlets – scholars meet at conferences and publish in certain journals, thus these are the main mechanisms that link the entrepreneurship community together, whereas scholarly inspiration seems to play a less important role. We also found that relatively few meeting places and journals integrate all three clusters (shown by the thick lines between all three clusters).

Finally, a clearer structure emerges in Fig. 4 in which we highlight the top weak ties with the overall highest values. The figure once again indicates that the social networks and shared communication system are the key mechanisms that keep the field together. From Figs. 3 and 4 we note that the Entrepreneurship Conference clusters and the Entrepreneurship Journal clusters tend to be linked together through the RENT Conference and journals such as *Entrepreneurship and Regional Development* and the *Journal of Small Business Management*, whereas the Entrepreneurship Journal clusters are linked with the Entrepreneurship Economics clusters by the Academy of Management (AOM) conference (and partly by the Strategic Management Society conference) as well as through journals such as *Small Business Economics*, the *Strategic Management Journal*, *Academy of Management Journal* and *Strategic Entrepreneurship Journal*.

6.3. Explaining the social networks of entrepreneurship scholars

We can draw some conclusions from this analysis. With regard to our first proposition, few scholarly communities within entrepreneurship tend to distinguish themselves through their appreciation of particular sources of scholarly inspiration. One exception is the Entrepreneurship Economics clusters that seem to have a stronger theoretical influence than the other communities. Thus, we can regard entrepreneurship as a phenomena-driven field that is bound together by a shared communication system and social interactions. As shown in Figs. 2–4, the field is held together by an extensive and comprehensive social infrastructure based on meeting places and journals that function as the "glue" that keeps the scholarly communities together. Having said that, it seems that there are few meeting places and journals that

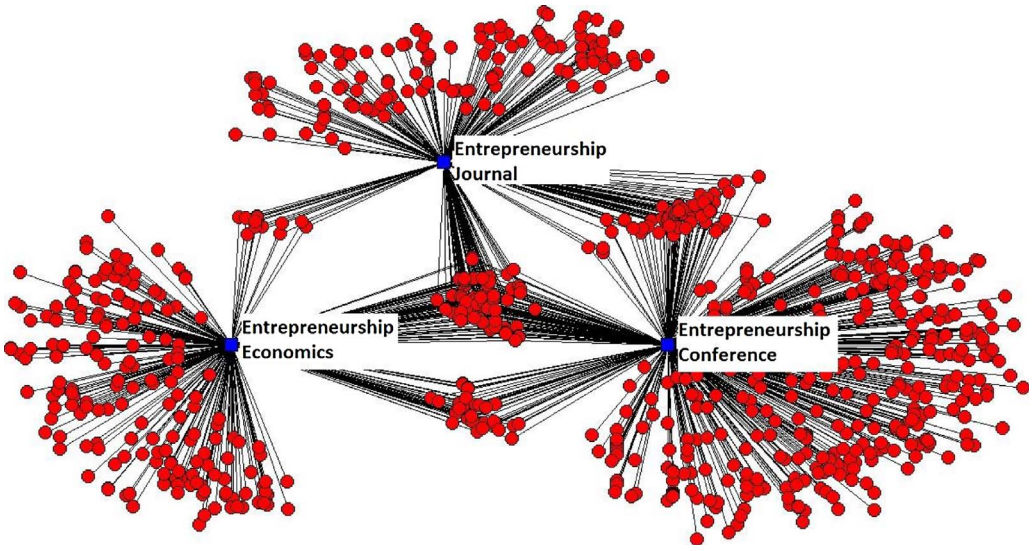

Fig. 2. Weak links between clusters.

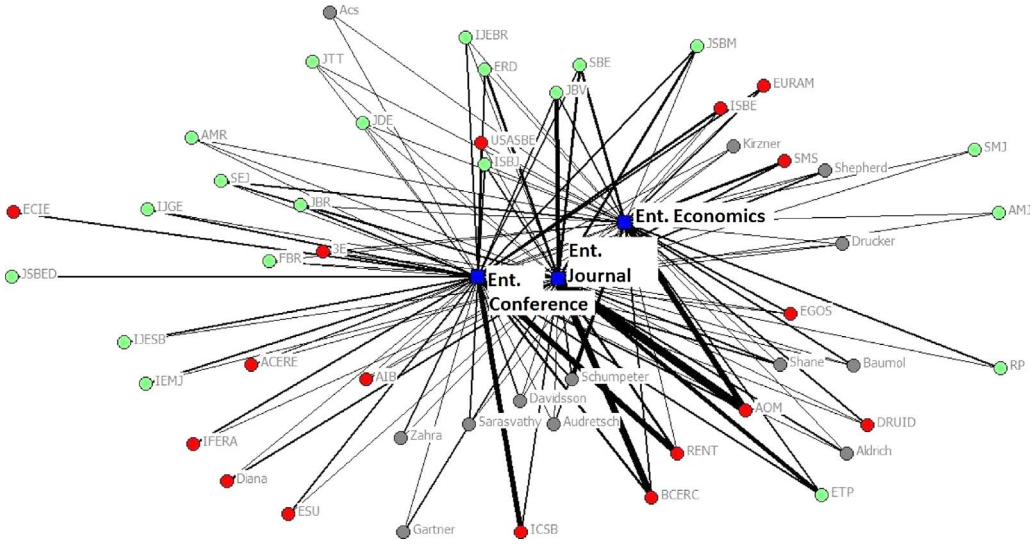

Fig. 3. Weak links between clusters, cut-off value: above 1%.

keep the entire community (the three main clusters) together. To some extent, the Babson Conference and the *Entrepreneurship Theory and Practice* journal can be said to play such a role. Thus, while we regard entrepreneurship as a "social scholarly community", it can be strongly questioned whether entrepreneurship has actually developed into a larger scholarly community that can be considered a coherent scientific field, rather than a number of scholarly communities that study similar phenomena.

In this respect it seems that two scholarly communities emerge from the analysis (subsections 6.1 and 6.2): One scholarly community is mainly embedded in the Entrepreneurship Conference clusters and internally connected by conferences linked to the "ICSB sphere" and linked to the Entrepreneurship Journal clusters through journals such as *Entrepreneurship and Regional Development* and the *Journal of Small Business Management*. Another scholarly community is embedded in the Entrepreneurship Journal and Entrepreneurship Economics clusters and especially connected through the Academy of Management (AOM) Annual Meeting and the Babson Conference, as well as through journals such as the *Journal of Business Venturing*, *Small Business Economics* and the *Strategic Entrepreneurship Journal*. Scholars in this community, particularly those in the Entrepreneurship Economics clusters, report scholarly inspiration from Schumpeter, Baumol, Audretsch, etc.

7. Comparing entrepreneurship and innovation scholarly communities

Finally, we move to our second proposition, i.e., comparing the scholarly networks among entrepreneurship and innovation scholars. In Table 4 we show the most frequent responses pertaining to their main sources of scholarly inspiration, their favourite meeting places and their most important publication outlets. We use Fagerberg and Verspagen's (2009) "demarcation level" of responses mentioned by at least 5% of the respondents.

As can be seen from Table 4, innovation scholars have some very strong sources of scholarly inspiration in Joseph Schumpeter and Richard Nelson, who were mentioned by more than 10% of the respondents. Scholars such as Freeman, Lundvall, Rosenberg, Pavitt, Dosi, Marx and Griliches, who have all presented strong theoretical and/or empirical contributions to the field, were also mentioned. However, among entrepreneurship scholars no scholarly inspiration source reached the demarcation level of 5%, indicating that entrepreneurship seems to be a much more fragmented and less theoretically strong scholarly field.

The Academy of Management (AOM) Annual Meeting appears to be a common meeting place for both entrepreneurship and innovation scholars – to a larger extent for the former than for the latter – but the

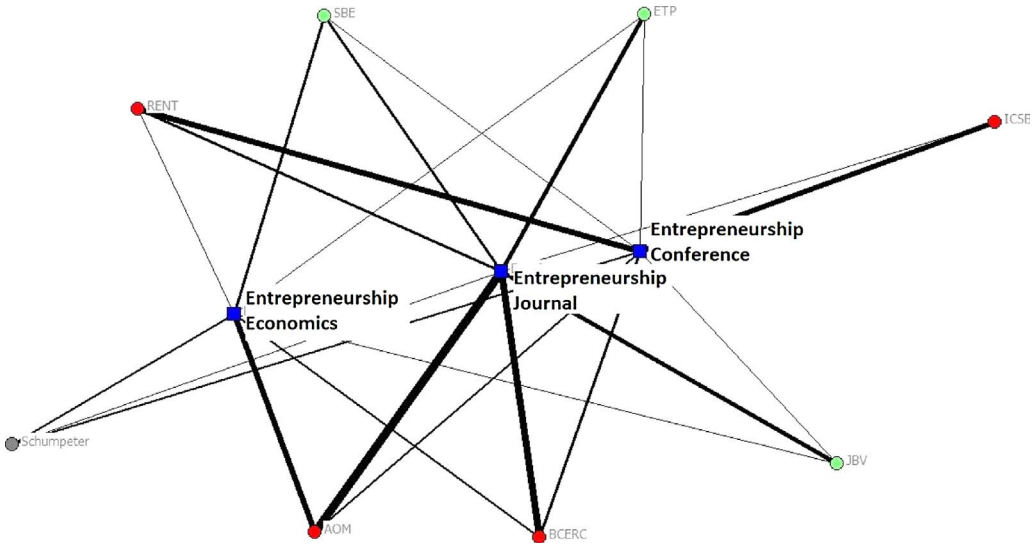

Fig. 4. Weak links between clusters, top weak ties.

Table 4
Comparison between entrepreneurship and innovation.

Entrepreneurship	Share (%)	Innovation	Share (%)
		Scholarly inspiration	
No scholars reached the 'demarcation level' of 5%.		Joseph Schumpeter	15.9
		Richard R. Nelson	13.8
		Christopher Freeman	8.8
		Bengt-Åke Lundvall	6.6
		Nathan Rosenberg	6.5
		Keith Pavitt	6.4
		Giovanni Dosi	6.2
		Karl Marx	5.5
		Zvi Griliches	5.2
		Meeting places	
Academy of Management (AOM)	19.0	International Schumpeter Society	15.5
Babson College Entrepreneurship Research Conference (BCERC)	12.8	Danish Research Unit for Industrial Dynamics (DRUID)	13.7
Research in Entrepreneurship Conference (RENT)	10.4	European Association for Research in Industrial Economics (EARIE)	5.6
International Council for Small Business World Conference (ICSB)	6.5	Academy of Management (AOM)	5.1
		Journals	
Entrepreneurship Theory and Practice (ETP)	9.0	Research Policy (RP)	45.6
Journal of Business Venturing (JBV)	8.6	Industrial and Corporate Change (ICC)	19.3
Small Business Economics (SBE)	8.2	Journal of Evolutionary Economics (JEE)	14.4
		Economics of Innovation and New Technology (EINT)	13.8
		Structural Change and Economic Dynamics (SCED)	7.9

scholars are mainly organized within two different divisions within the Academy – the ENT Division and the TIM Division respectively (Gartner et al., 2006). Apart from that, the two scholarly communities tend to meet at different meeting places: Entrepreneurship scholars at the Babson Conference, the RENT Conference and the ICSB World Conference, whereas the most popular meeting places for innovation scholars are the International Schumpeter Society, the Danish Research Unit for Industrial Dynamics (DRUID) and the European Association for Research in Industrial Economics (EARIE).

It is obvious that innovation scholars have a very strong and important publication outlet in the *Research Policy* (RP) journal, mentioned by almost half of all respondents (45.6%) in the study by Fagerberg and Verspagen (2009), followed by a couple of other strong outlets, such as *Industrial and Corporate Change* (ICC), *Journal of Evolutionary Economics* (JEE) and *Economics of Innovation and New Technology* (EINT). Entrepreneurship scholars, do not articulate the same hierarchy of publication outlets and the most frequently mentioned journals, *Entrepreneurship Theory and Practice* (ETP), *Journal of Business Venturing* (JBV) and *Small Business Economics* (SBE) were mentioned by less than 10% of the respondents.

Fagerberg and Verspagen (2009) identified five main communities of innovation scholars, which they labelled: Management communities, Schumpeter crowd, Geography and Policy, Periphery, and Industrial Economics. They demonstrated that the field was bound together by some common intellectual inspiration sources (e.g., Schumpeter, and Nelson), but also through journals such as *Research Policy* and conferences such as DRUID and the International Schumpeter Society. In entrepreneurship we found three main communities of scholars (see Fig. 1 and Table 3) that we labelled Entrepreneurship Conference, Entrepreneurship Economics and Entrepreneurship Journal. Our analysis shows that these scholarly communities are less bound together by theoretical inspirations and instead based on shared social interactions and communication systems, where scientific conferences and meeting places play an important role in keeping the field together.

The analysis strongly supports our second proposition, i.e., that the scholarly communities in entrepreneurship and innovation studies have different characteristics and that entrepreneurship scholars are bound together based on other factors (the social structure of the field) than innovation scholars, who are grouped together based on their theoretical background and scholarly inspiration sources. We also note that Fagerberg and Verspagen (2009) talk about "intellectual communities of innovation scholars", which seems to be an accurate description as the field is to some extent theory-driven and the scholars are bound together in different communities by their disciplinary and theoretical backgrounds. However, it does not apply to entrepreneurship as a scholarly community and we prefer to talk about "social communities of entrepreneurship scholars" as the field is more phenomena-driven and the communities of scholars are less bound together by their disciplinary and theoretical backgrounds, but instead by the social structure, in which the conferences and meeting places play an important role in keeping the different scholarly communities together.

How can these differences between innovation and entrepreneurship scholarly communities be explained? Based on our comparison between innovation and entrepreneurship in subsection 2.4 (but also the more extensive discussions in Fagerberg and Verspagen, 2009; Fagerberg et al., 2012a, 2013) we argue that the fields differ in some significant ways that resulted in them developing in parallel with little interaction. Although both fields are rooted in the cognitive contribution of Schumpeter and emerged as a reaction to societal changes, they had different development paths. Innovation is rooted in a strong policy tradition and disciplines such as economics, sociology and at a later stage strategic management, whereas entrepreneurship is anchored in practice and management studies in a broader sense. As a consequence, the fields focus on partly different levels of analysis – innovation on firm level and more aggregated levels of analysis, entrepreneurship on the individual and firm levels of analysis. Shepherd and Patzelt (2017) even argue that innovation and entrepreneurship scholars using a similar level of analysis (firm level) tend to have different views on the rationality of the innovation and entrepreneurial process respectively – innovation scholars focus more on the risks involved in innovation projects, whereas entrepreneurship scholars tend to a greater extent focus on the inherent uncertainty in the entrepreneurial process. The differences in disciplinary backgrounds also have consequences for the way the scholarly community has been organized in terms of social networks, meeting places, professional associations and publication outlets.

8. Conclusions

8.1. Main findings and future perspectives

In Proposition 1 we assumed that individual entrepreneurship scholars are bound together in broader scholarly communities by a common scientific outlook and shared communication, including

journal outlets and meeting places. The study revealed that as a scholarly field, entrepreneurship can be regarded as phenomena-driven and bound together by a shared communication system and social interaction – where theoretical inspiration sources were less important. It could thus be regarded as a "social scholarly community". It is difficult to argue that entrepreneurship has developed into a larger coherent scholarly community (creating a "discipline"). However, in our analysis we identified two broader social communities of entrepreneurship scholars: (1) a scholarly community embedded in the Entrepreneurship Conference clusters, linked to the "ICSB sphere". This rather eclectic group of scholars have a diversity of approaches, theoretical frameworks, as well as different definitions of what constitutes entrepreneurial activities (see e.g., Audretsch et al., 2015); and (2) a scholarly community related to the Entrepreneurship Journals and Entrepreneurship Economics clusters, characterized by a stronger domain-orientation in line with the arguments of, for example, Kuhn (1962) and Becher and Trowler (2001), emphasizing the need for some agreement on defining central concepts, fundamental research questions, as well as theoretical and methodological approaches (see e.g., Shane and Venkataraman, 2000; Davidsson, 2005).

In Proposition 2 we explore the similarities in and differences between the social structures of scholars engaged in entrepreneurship and innovation. The present study shows that the entrepreneurship and innovation scholarly communities have different characteristics: Entrepreneurship can be regarded as "social scholarly communities" in which scholars are bound together by their social structure, whereas innovation can be deemed "intellectual scholarly communities" (Fagerberg and Verspagen, 2009) in which the field is more theory-driven and scholars are bound together by their disciplinary and theoretical backgrounds. In this respect, we can assume that entrepreneurship as a scholarly field bound together by scholars' social identity is more vulnerable to change and more dependent on the interest of and legitimacy from external stakeholders. We also argue that the differences between the two fields can be explained by their historical roots – the fact that they are grounded in different disciplines and focused on different levels of analysis has resulted in separate ways of organizing the scholarly communities.

Where is entrepreneurship as a scholarly field heading? Obviously, making predictions about the future is difficult, if not impossible, but based on our study we can discuss a couple of scenarios. We believe that the divide between the two broad social communities of entrepreneurship scholars identified in the present study will continue to evolve. Following the increased institutionalization and academic legitimacy of entrepreneurship as a scholarly field, a successful and growing group of scholars will focus on more narrow research questions and robust knowledge, thus developing a stronger domain of entrepreneurship. However, entrepreneurship has a long tradition as an eclectic field and remains both a promising and growing scholarly field, attracting many scholars from different disciplines. In order to maintain this dynamic, entrepreneurship must continue to be an eclectic field because if not, few scholars will take any notice of it in the long term (similar arguments are presented by Audretsch et al., 2015; Shepherd, 2015).

Finally, the relationship between innovation and entrepreneurship is complicated. It is obvious that knowledge of both is important for creating growth and dynamics in the economy, i.e., there is an interest in building joint knowledge, but there seems to be little interaction between the two fields. Both can be regarded as fairly legitimate academic fields with different characteristics (see Section 7), i.e., scholarly inspirations, community systems and meeting arenas. One opportunity for closer collaboration between the two fields might be to find common research questions and theoretical frameworks. For example, following the Schumpeterian heritage of both fields and focusing on issues related to technology-based ventures, corporate entrepreneurship (innovation management) and venture capital could stimulate closer interaction between them. Shepherd and Patzelt (2017) also suggest a stronger focus on resources and "absorptive capacity" as a common ground for further collaboration. Another opportunity to improve collaboration between entrepreneurship and innovation scholars would be to move the social communities closer to each other. It seems that many entrepreneurship and innovation scholars already tend to work in the same local research units (Clausen et al., 2012), but it is also necessary to create a common social infrastructure in terms of joint PhD courses, meeting places, conferences, journal outlets and enhanced collaboration between professional associations.

8.2. Future research

The study revealed some issues that merit further investigation. First, we noted that scholars involved in the numerous small, dense networks often had a greater scholarly impact than those who are the most cited within the field. The questions that arise are: How is scholarly impact created? and How can it be measured? Today, scholarly impact is measured by rather one-dimensional indicators (e.g., number of citations, H-index and i10-index), but as our study indicates, article publication is not the only way of making a scholarly impact. Therefore, scholarly impact needs to be seen in a broader perspective and not only in terms of published works. We need multiple measures that account for different stakeholders and ways of creating scholarly impact (see Aguinis et al., 2014). Second, in our analysis we argued that entrepreneurship could be regarded as a successful and prosperous "social scholarly community" and identified an eclectic group of entrepreneurship scholars – a scholarly community that has evolved in a different way to the assumptions of traditional theories on the development of new scientific fields. The question is: How can we understand the evolution of these eclectic and socially-based scholarly fields? In order to understand such fields, we might need to apply other theoretical frameworks and Aldrich (2015) suggests using the frameworks of intellectual movements (Frickel and Gross, 2005) for such understanding.

8.3. Limitations

The representativeness of the database is a critical issue. As we have no information about the population of entrepreneurship scholars around the world, we cannot assess the representativeness of the database. When creating our database we were aware of the problem and for that reason used a broad range of international conferences to compile the data. However, the fact that we have used conference participant lists to identify our respondents might in itself potentially bias our results. In addition, there may be country biases in the results. We tried to reach scholars who identify themselves as entrepreneurship scholars. However, in countries with a strong theoretical disciplinary focus (compared to a phenomena-driven field such as entrepreneurship), as well as countries in Asia, Africa and South America where entrepreneurship has not yet become an established and legitimate field of research, scholars might place themselves within existing disciplinary contexts and not identify themselves with entrepreneurship.

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