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ABSTRACT
This paper deals with institutional conditions in regional innovation systems; how institutions affect the organization of innovation activities among firms, and in what ways regional policy initiatives can be supportive. The analysis draws on data on innovation networks and activities in the life science, media, and food industries. The theoretical framework takes account of the ways in which regional policies are able to impact individuals' and organizations' action in relation to each other by being internalized. It is argued that such ability is decisive for the success or failure of the policy initiative. Three cases of regional policy targeting the promotion of innovation in different industries in Sweden are analyzed.

Key words: regional innovation systems, knowledge, institutions, innovation, policy

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Introduction

This paper deals with institutional conditions in regional innovation systems. Main aim is to assess how regional- and industry-specific institutions affect the behavior of their target population (the actors of the system) and in what ways regional policy can contribute to shaping such conditions. Institutions are referred to as 'regulating' aspects of social life such as rules, practices, routines, habits, traditions, customs and conventions that, by being internalized by the vast majority of actors in a population, contribute both to providing stability in society and to shaping evolutionary economic trajectories (NORTH, 1990; SCOTT, 1995; MASKELL and MALMBERG, 1999; GERTLER, 2004). A central observation among institutional scholars, particularly geographers (e.g. GERTLER, 2004; SAXENIAN, 1994; STORPER et al., 2007), is that the regional context, in particular the regional institutional framework, is perceived highly influential for the way actors perform. However, as opposed to what might be expected based on previous research (e.g. ANTONELLI, 2000; STORPER, 1997), such regional conditions do not always primarily matter by shaping a local arena for knowledge exchange and direct interaction between the regional actors. Such inter-organizational relations are often, at least in some sectors, to a large part organized within globally configured professional communities (ASHEIM and GERTLER, 2005; GERTLER, 2009; MOODYSSON, 2007). In this paper, the life science, media and food industries are compared to address such sector specificities with regard to the organization of innovation activities. Innovation is understood in a broad sense, including new products, new processes, new methods of production, new sources of supply, the exploitation of new markets, and new ways of organizing business (FAGERBERG, 2005). Differences between the cases are assumed to draw partly on the specific industrial and organizational culture built up over time, but also on the specific modes of innovation characterizing the respective industries. In other words, industries differ not only in their products, processes or sources of supply, but also in the way they organize their innovation activities.

To structure the analysis, some aspects are to be kept constant and some to be analyzed through observing variations. The objects of study are located in the southernmost province of Sweden, a region named Scania. The formal institutional framework (such as general laws, labor market regulations, tax policies, education system etc) is thus uniform across the cases. But of course certain regulative institutions are more or less sector specific. Copyright laws are for instance primarily relevant to the media sector, stem cell regulations (and similar) to the life science sector, and safety requirements for food processing (and similar) to the food sector. These regulative differences are indeed important to keep in mind but they do not have a major impact on the formation or efficiency of *regional* innovation policies. They form the very basic institutional framework for these industries; obeying these rules is central to being in the business. They are thus by default internalized by all

actors. There is however a range of other sector specific institutions which strongly affect the preconditions for shaping efficient regional innovation policies targeting different sectors and which the policies can relate to and possibly also affect and change. These are primarily sorted into the category which Scott (1995) and followers would classify as normative and cognitive institutions. Concrete examples are dependence of and attitudes towards social networks as an alternative to more formalized inter-organizational alliances, sensitivity to territorially embedded cultural factors such as differences with regard to trends and taste, perceived relevance of scientific knowledge for product and process development within different sectors, and the perceived need for geographical proximity between organizations which interact in business and knowledge exchange activities.

The selection of cases for the empirical analysis reported in this paper – regional clusters of firms representing three different industries – is based on the assumption that there are certain profound differences with regard to such normative and cognitive institutions between the compared industries. The core question is whether different regional policies targeting these different industries are taking these institutional differences into account and what consequences this bring in terms of success or failure of the policies carried out.

Conceptual framework

Functional and territorial integration

An obvious point of departure for a study of the regional preconditions for innovation is the work on industrial districts in Italy and elsewhere from the 1980s and 1990s (e.g. BECATTINI et al., 2010), as well as more recent work on regional innovation systems (e.g. COOKE et al., 2004). A central aspect of these writings is the emphasis on the combination of functional and territorial integration of activities which creates beneficial effects for the integrated actors that are larger than those each actor could generate in isolation. In other words, these theories stress that geographical proximity between actors tends to facilitate interaction which, in turn, promote the generation and transfer of skills and qualifications both by reducing transaction costs and by providing possibilities for 'spillovers' of knowledge and information (AUDRETSCH and FELDMAN, 2004). A popular term to describe the latter is the term 'localized learning' (MALMBERG and MASKELL, 2006).

Since the seminal contribution by MARSHALL (1920), numerous elaborations of these basic ideas have been examined in a range of studies by economic geographers and other scholars, focusing both on traditional manufacturing (e.g. GERTLER, 2004) and more research based industries (e.g. Cooke, 2007). Although there may be discussion about whether the informal ties that develop in the local milieu go deeper than contracts (HARRISON, 1992), there seems to be a broad consensus that

collocation of related actors are beneficial at least partly because of the embeddedness stemming from interdependencies between small firms and the local community. Sometimes the term 'Marshallian agglomeration economies' is used to describe informal spillovers rising from geographically close friendship and family relations rather than organizational linkages (MARTIN and SUNLEY, 1996). Some studies stress the associational capacity based on Marshallian agglomeration economies as something so strong that it even goes beyond the actual awareness of the individuals embraced by it. As BATHELT (2005, p. 206) puts it, "actors do not have to search their environment or make particular investments to get access to this information. They are automatically exposed to news reports, gossip, rumours and recommendations about technologies, markets and strategies just by being in the cluster." Other studies provide a different view, stressing the exclusive character of the associational capacity, including members, excluding non-members (MOODYSSON, 2008). These findings, whether stressing the locally contained or globally distributed associational capacity, are however not very specific on what it is that shapes this thick texture of interdependencies in the local (or global) community, beyond a general argument that it has something to do with institutions shaping trust, commitment and mutual understanding.

Societal institutions shaping action

One way of moving towards a concrete framework for studying the impact of regional policy on innovation is to further specify the institutions in play. A basic distinction is made between institutions depending on their degree of formalization (NORTH, 1990). Formal institutions are officially stated, whereas informal institutions not necessarily are explicitly communicated among their target population. A further refinement is presented by SCOTT (1995) who separates regulative, normative and cognitive pillars of institutions. The regulative dimension represents rules and laws that work as coercive mechanisms and are legally sanctioned. The normative dimension is connected to values, norms, codes of conduct, not legally sanctioned but morally governed. The cognitive dimension is based on beliefs and models of reality taken for granted and supported by culture and everyday practices. These should thus be understood as interdependent and mutually reinforcing pillars, which, seen as a whole, define the workings of the institutional framework of an innovation system (MOODYSSON, 2007).

When it comes to activities shaping and supporting region specific institutions it is necessary that those appeal to all three pillars of institutions. From a public policy point of view, the formation and underpinning of institutions affecting regional development, network creation and innovation usually takes place at more than one geographical level. Constitutionally Sweden has two main levels; the national (central) and the local (municipalities and county councils). As Sweden is part of the

European Union, its laws and directives are also applied in the country. At the national level, the Swedish inhabitants are represented by the Swedish parliament (*Riksdagen*) which has legislative power. It follows that authorities at the national level are responsible primarily for the formation of regulative institutions. In other words the most important task for the central state is to create favorable basic conditions, the overall structures within which the local (and regional) level is functioning (McCALLION, 2007).

In 1997 Sweden introduced a Regional Pilot Programme which transferred the responsibilities in areas of regional development and planning from the central government to regions. Scania was one of the regions participating in the pilot. Within the program, the region coordinates efforts to develop industry, communications, culture and cooperation with other regions within and outside Sweden. However, since regional actors do not have legislative power, they have to adopt their activities to the framework provided by authorities at the central level. Within this framework they influence the development of the region in many important areas. Since the mid 1990s, a popular strategy for Swedish regional policies has been to target the promotion of clusters (LUNDEQUIST and POWER, 2002). These strategies also emphasize the regional universities' role as growth engines. In this way regional actors affect the economic development of the region and contribute to creating normative institutions for many activities (EGSTRAND and SÄTRE, 2008). In the following section the effect of regional policy on institutions is discussed in closer detailed.

Regional policy shaping institutions

In line with the arguments above, policy promoting regional innovation systems must appeal to all three pillars of institutions. Traditional science and technology policies purely focusing on the supply side of R&D investments have proven insufficient. In Sweden as well as in other Nordic countries this observation has led to a reformulation of national and regional strategies for supporting innovation (ISAKSEN, 2009; LUNDVALL and BORRÁS, 2005), away from a one-sided focus on high-technology and science. OUGHTON et al. (2002) identifies three main objectives for a more broad based regional innovation policy stating that this should (1) facilitate coherence and collaboration among actors, (2) identify and express needs and demands of the actors, (3) coordinate strategies for approaching these needs and demands. In an attempt to move from a general discussion of policy challenges and objectives towards a more concrete description of actual policy activities targeting these objectives, NAUWELAERS and WINTJES (2002) provide an overview of instruments based on various needs identified in different types of regions (see also TÖDTLING and TRIPPL, 2005). A shared characteristic of these instruments is that they aim at stimulating behavioral change of actors, i.e. they aim at affecting institutions rather than providing direct support. Many initiatives geared towards such

behavioral value added take explicit account of at least two of the objectives identified by OUGHTON et al. (2002), i.e. coherence and coordination of needs and demands. One of the most common activities for achieving coherence and collaboration among actors are stimulation of inter-firm networking (e.g. match-making and creation of umbrella organizations etc).

Another characteristic of these activities is that they tend to target the regional system as a whole, rather than individual firms within the system, especially those targeting coherence and collaboration, but also those coordinating strategies for approaching the needs and demands of the actors. Examples are development of local strategic plans and schemes promoting the culture of innovation, instead of more firm oriented support programs for R&D subsidies and directed provision of venture capital, but also more concrete attempts of setting up schemes for mobility between and cooperation among industry and academia. As implicitly indicated by both NAUWELAERS and WINTJES (2002) and OUGHTON et al. (2002), none of these activities are likely to fulfill the goals set out – shaping conditions supporting regional innovation – if not combined with at least some of the others. This, in turn, raises a challenge of coordination since such a policy portfolio, by definition, is mastered by actors at various geographic levels (e.g. regional, national, international) and with various type of influence on the workings of the system (e.g. direct, indirect). An increasing trend among regions is the formation of umbrella organizations filling the role of coordinating various support activities, representing the regional as well as the national government, drawing on sources from the public as well as the private sector, and including business as well as academia and other interest organizations (ETZKOWITZ and LEYDESDORFF, 2000). The term 'policy' should thus be understood in a broad sense, embracing activities carried out not only by the public sector but by actors from all three spheres of the triple helix constellation (BORRÁS and TSAGDIS, 2008).

Many recent studies urge for a customized regional policy approach, taking unique regional characteristics into account (IAMMARINO, 2005; TÖDTLING and TRIPPL, 2005; SCHWERIN and WERKER, 2003; ASHEIM et al, 2011). However, regardless of this urge for customization, concrete policy guidelines (as well as the instruments applied in such policy initiatives) remain quite generic. The main message sent by academic work is that regional innovation policy should support network creation with the region, at a global level, and promote university-industry links of various types (COOKE et al., 1997; COOKE et al., 2000; LAMBOOY and BOSCHMA, 2001). The main instrument implemented in regional policy initiatives following these guidelines is the provision of platforms for interaction (BORRÁS and TSAGDIS, 2008). The discussions about customization due to different innovation practices within different industries and firms are not explicitly elaborated.

There have been several studies analyzing the impact of regional policies on regional development and network creation. EGSTRAND and SÄTRE (2008) analyze the effect of policies promoting collaboration in two Swedish cities. They take a critical stand, arguing that there is a risk that resources are devoted to various application processes and to creating a long series of partnerships and networks rather than being allocated to practical development initiatives. They also point out that too much attention is paid to the notion that collaboration in itself leads to economic development, while their empirical findings suggest that despite very different strategies for collaboration the labor markets in the analyzed cities do not differ significantly. The main conclusion is that the politicians' focus on collaboration is one way of justifying the revised regional policy rather than a delegation of actual power to the local level. Such imprecise regional policy can lead to a situation in which the original aim of emphasizing the importance of economic development becomes counter-productive. A more positive approach is taken by GELLYNCK and VERMEIRE (2009). Their analysis of the food sector in Meetjesland region in Belgium reveals that regional networking has a positive contribution to market and process innovation, to quality assurance and to the organization of R&D. However, the attitude to public support differed within the firms, depending on their innovation competence. The authors conclude that the main challenge for regional policy makers is to develop a more targeted approach to particular subgroups with respect to their behavior in networking and their innovation capacity. These divergent findings are but two examples that motivate increased focus on inter-sector comparative studies to assess the impact of and preconditions for regional innovation policy. The remainder of this paper presents an empirical analysis of policy initiatives promoting innovation systems in three different types of industries in the Scania region.

Methodology

Main method for data collection is structured and semi-structured interviews with representatives of a selection of firms from the media, food, and life science industries. Data collected through interviews reflects the respondents' points of view and perceptions. This might limit the validity of the study given that the main objective is to assess the actual preconditions for influence of policy initiatives on the organization of innovation in different sectors. However, since policies are internalized by organizations only if they become integrated parts of their individuals' natural frame of reference, there is strong correspondence between the actual and perceived situation, which make interviews a preferred methodological choice.

A total of 37 semi-structured interviews were conducted, mainly with CEOs, CROs and other leading staff at firms and research organizations. The narratives collected through these interviews are

combined with data on organizational networks and perceived dependence on regional support programs, collected through structured interviews and secondary sources. A total of 15 interviews were conducted with policy makers. Additional input for assessing the policy initiatives was received through participation in focus group meetings involving representatives of the regional council, one of the main stakeholders responsible for the design and implementation of these initiatives. Interviews were also conducted with key individuals representing the regional policy initiatives, combined with secondary data describing those.

A total of 95 structured interviews were conducted with firms (mostly CEOs, general managers or entrepreneurs). The aim was to find out (1) which regional activities supporting their sector development in the region the companies are familiar with, (2) which ones they use, (3) in which ways they benefit from them, and (4) what kind of support they perceive as most important for their firm. The analysis of the media sector draws on 37 such structured interviews. The initial list of companies included firms engaged in film production, design, advertising, animation, computer programming, software publishing and other activities. After a manual selection process, excluding inactive firms and firms that only have sales departments in the region as well as independent artists and interest organizations without real commercial activities, the cluster (the source population) was defined as being composed by 71 companies. Thus, the structured interviews cover a sample of approximately 50 percent[1]. The analysis of the food industry draws on 28 structured interviews. The initial list of companies included firms engaged in food production and food processing as well as interest organizations of various kind. Since the food sector is much larger and more dispersed than the media and life science, the principles for defining the source population had to be adjusted. After a manual selection process (similar to the media case), attention was paid to identifying companies explicitly targeting innovation as their competitive strategy. 35 such companies were identified and defined as the source population. The structured interviews thus cover a sample of 80 percent of the source population. The analysis of the life science sector draws on 30 structured interviews. The initial list of companies was based on the information provided by regionally and nationally administered business organizations. After a manual selection process 43 companies were defined as constituting the source population. The response rate for the life science case study was thus 72%. The results of the interviews are discussed in the section below.

Analysis

The regional context

[1] A desktop-based non-response analysis revealed no systematic differences in terms of size, age and type of activities between responding and non-responding firms.

As stated above, all three cases analyzed in this study are located in the region of Scania in southern Sweden. The region hosts 1.2 million inhabitants and the actors analyzed in this paper are located in or in immediate connection to the two cities Malmö and Lund. Malmö is the third city of Sweden and Lund hosts one of the largest, oldest and most prestigious universities of the country (according to a recent evaluation by the Swedish National Agency for Higher Education). As regards industrial profile, the region has transformed from being dominated by agriculture and heavy manufacturing towards more high value added sectors. Lund University played an important role in this transformation (BENNEWORTH et al., 2009). This study focuses primarily on the parts of the regional innovation system constituted by, and affecting, the new media, food, and life science industries. The rationale behind this selection of cases is that they represent three distinct types of crucial knowledge bases. According to theoretical assumptions outlined above, these differences have implications for the needs on innovation policy shaping the workings of the regional innovation system.

The remainder of this paper provides an account of these policy initiatives and an analysis of how they have managed (or failed) to appeal to their respective target population, to what extent they have been internalized. Even though there may exist several more or less interdependent and overlapping policy initiatives supporting the respective industries, those analyzed in this paper are the most influential ones currently taking place in the region.[2] They are based on a combination of regional, national and international funding and they are implemented by a constellation of actors representing the triple helix of industry, university and the public sector. They are typical illustrations of the present strategy of regional industry support in Sweden through their organization as sector-focused 'platforms' in which a range of previously independent policy measures in support of regional industries are collected, including measures provided by VINNOVA and the EU Structural Funds. They share many characteristics, such as a strong focus on local network promotion, but they also display some differences, partly related to their various age and size, and partly their various ability to adapt to the specific demands of their target industry. Each section below describes the activities in the policy programs and presents an assessment of how these activities match the needs from the industry.

[2] This judgment is based on a range of previous studies and official reports on policy support strategies in the region. In 2009 the regional authority (Region Skåne) initiated a large survey aiming to identify all actors and activities composing the regional innovation system (in which they also collected previous studies on the regional innovation system). The 'platform initiatives' analyzed in the present study were identified as the most influential measures targeting these three industries (HALLENCREUTZ and BJERKESJÖ, 2009). Also in Region Skåne's official response to the OECD Territorial Review of Skåne (to be finalized in June 2012) these initiatives were put forward as the only examples of policy supporting media, food and life science in the region (REGION SKÅNE, 2011).

Media

The new media cluster in Malmö and surroundings represents a new niche in a local economy historically based on heavy manufacturing. With regard to industrial activities, the sector covers the scope from traditional film and broadcasting to digital design and computer games software. A shared feature of all these activities, despite their broad scope with regard to applications, is that they draw primarily on artistic knowledge. Another shared feature, partly coming as a natural consequence of the crucial knowledge base, is that they are geared towards creating images and experiences rather than production. An important aspect of innovation is related to new ways of creating artistic artifacts – process innovations, emerging from capabilities to use new technologies. The companies in the sample are working with different types of media innovations, not only new products and processes, but also new market concepts and organizational structures. Some of these innovations are defined as new to the firm, for instance when a company moves from pure artistic movies to more market oriented, commercial ones (changing its product and market concept); some are more radically new to the sector as a whole. One example of the latter is the development of user friendly graphical interfaces for hand held digital devices (e. g. mobile phones) that unite high quality design and cutting edge technology in a completely new way. Companies also find new ways for competence building by organizing joint events with regional support organizations, municipality and local university, however this type of renewal are not defined as innovation in the present study. Project organization and informal networking are important for firms in this sector, for both products and process innovations. Formalized networks appear less frequent. Knowledge exchange for innovation usually takes place within local networks as actors are more context sensitive due to cultural factors and cognitive schemes of interpretation.

There have been numbers of different policy initiatives supporting new media development in the region. In order to unite different activities, and to allow them to benefit from each other, the regional authority has initiated an umbrella organization (i.e. platform) called Media Möteplats Malmö (MMM), recently renamed to Media Evolution (ME). ME has around 100 members comprising companies, universities, local and regional organizations. A large part of MEs activities, integrating the above mentioned initiatives, focuses on promoting networks between actors in this sector, primarily within the region but to some extent also on an international arena. Concrete examples are the organization of meetings and conferences, and the use of social media for stimulating interaction. In the publicly available information (e. g. website, strategic plans, project descriptions) there is no a clear definition of innovation, but their concrete activities reveal a focus on promotion of the development of new products, services, and processes within new media, as well as the entrance to new markets (geographically as well as sectorally). At a first glance the focus

of the policy initiative thus seems to correspond with the actual focus of the companies' innovative strategies. In most cases ME does not provide support through direct investment, but through information about opportunities for new markets or products, joint competence building or through coordination of networking activities. Through its dominant position in the media industry in the region ME also to a large extent act as a 'gatekeeper' for implementation of new initiatives – i.e. applications to national and international funding agencies are usually coordinated and hosted by ME.

The structured interviews reveal that in general media companies are well aware of available support activities. All companies but one knew of ME (or its predecessor) and 25 claimed they had benefited from it in one way or another. The three most available benefits provided by the support programs are help with access to market knowledge, help in sharing knowledge with customers, and help in sharing knowledge with competitors. The three least available benefits are help with management knowledge, financial provisions, and help with human resource development. Comparing these results with what firms actually perceive as most important for their activities indicate a slight mismatch. The two most important needs – financial support for innovation projects and help with human resource development – are the ones least met by regional policy initiatives. At the same time the three most available benefits, all connected to knowledge sourcing, are usually handled by the companies through informal channels like pre-established personal networks, blogs and other Internet based intermediates (MARTIN and MOODYSSON, 2011). The policy initiatives however try to respond to the third most important need – help to find partners – by promoting business networking and encouraging the sharing of knowledge with competitors and customers. In concrete terms this is provided through the organization of more or less informal workshops, seminars and physical as well as virtual platforms for spontaneous meetings.

While not intervening on regulative institutions affecting actors in this type of industry, except through the formation of the member organization as such and through providing specific funds for networking only applicable for the members, these activities aims explicitly at shaping the normative institutions among actors in the region, and to reduce the institutional mismatch that seem to appear between different segments of the industry and different parts of the region. However, while the companies need help to find partners for very concrete problems solving and actual collaboration, these activities aims towards more open-ended social networking and harmonized agendas among the firms and related actors. As revealed in the interviews, such networking is virtual and totally informal. There is thus no need for a formalized top-down initiative to promote it. Normative institutions arise and evolve in self-organized communities, largely out of reach for policy.

While the policy initiative may succeed in increasing the interaction between firms classified as belonging to the same cluster, such interaction rarely result in more long-term relations. Instead, these relations are shaped within interpersonal subgroups which form and grow in a more organic manner.

Food

The food cluster in Scania is a prime example of a traditionally strong but declining industry which recently has entered a phase of renewal. The need for renewal was partly triggered by Sweden entering the European Union in 1995. To deal with challenges from increased international competition Skåne Food Innovation Network (SFIN) was founded in 1998. It is an umbrella organization that unites companies, universities and governmental agencies related to the food industry in Scania. Main aim is to increase the competitiveness of the industry by encouraging business-to-business and business-to-research collaboration. In parallel, it seeks to increase the attractiveness of the industry to young educated people to ensure human capital supply. Similarly to ME, SFIN seeks to raise the pace of innovation and processing proficiency in the business. It is marketed as a platform for innovation in food industry, but again the concept of innovation is not clearly defined. However, it is primarily a matter of the development of new products, processes, and patterns of food consumption. Recently the capabilities to enter new markets are also being promoted. Similarly to ME, SFIN mostly provides a platform for interaction rather than direct investments to support innovation, and a large share of available support for food in the region is channelized through SFIN.

A shared feature of the firms composing this cluster is that they have their roots in engineering based knowledge, but to a varying extent have been able to adapt to novel input from science based knowledge (represented by the university as well as other firms in the region and abroad). One intermediate observation from previous studies of this case is that the policy support initiative faces challenges based on the conservative culture characterizing many of the actors in this industry (LAGNEVIK et al., 2003). The main characteristic of this industry with regard to organization of innovation activities can be summarized in the following way. Most innovation processes are carried out within the boundaries of traditional firms and formally established inter-organizational alliances (GRABHER, 2004). The local environment is important as it contains historical linkages embedded in the economic system. The innovative capacity of the actors is expected to gain from transcending such spatial and organizational boundaries, tapping into novel sources of knowledge input. The dominant mode of innovation is thus quite different from the case of new media, in which informal networking on and temporary alliances are crucial. As opposed to organizationally dispersed but

geographically dense knowledge sourcing, most development activities draw on pre-established organizationally tight networks. The most known and successful examples of innovation in this sector are niche products such as functional food, developed in collaboration between biotechnology and food companies. Other types of innovations include new ways of organizing large scale production and processing of food products, or entering new niche market (e.g. through producing healthy and/or environmentally friendly products in new ways).

The structured interviews reveal that when only provided the name of the policy initiative, 19 companies could identify that they heard of it, while only two said that they actually used and benefited from it. However, according to the data at SFIN's website at least 13 companies from the list were involved in the initiative's activities in one way or another. In follow-up interviews the companies were asked not about the initiative itself, but about the projects initiated by SFIN in which the company should be involved (according to SFIN). Also after this follow-up discussion some of the firms could not confirm that they are involved in the projects and thus nor specify how they contribute to its development. Two firms were aware of the activities and knew that they were formally involved, but they could not indicate any benefits from this participation. One of these is an old established firm, whose CEO thought that this is a very good initiative for young small companies in their early stage. However, she did not see how their company could benefit from it and therefore soon withdrew from it. So finally from 28 companies, eight could identify the benefits of the support activities.

Our findings suggest that the policy initiative foremost helps the firms and the university to find each other. Partly, it adds to human resource development and technological knowledge improvement. The companies' top three needs are financial support, help with human capital development, and help with information about new technologies. SFIN does not provide financial support, but is engaged in human capital development through attracting young people to the industry and through supporting relations between firms and the university. It seems like the main challenge for SFIN is to engage the firms to participate in the activities, to make them aware of the organization and its benefits, to persuade the companies that the time invested in the activities will eventually pay-off. Another challenge is to establish more organizational relations with the companies. As it is now, most contacts are established with one or a couple of individuals within each company, while the company as a whole is not aware of the projects, their goals and potential benefits.

While not intervening on the regulative institutions, SFIN, like most regional innovation policies, seek to implement new norms within the industry where innovation is organized in open temporary networks. However, these new norms are not compatible with the cognitive schemes of

interpretation among actors in the food sector. The culture of organizational practices among the entire group of companies should change in order for the initiative to succeed. By working actively to increase the firms' awareness of the potential benefits from interacting with academia, the initiative tries to promote network formation within the region. However, so far it has reached only a small group of dedicated enthusiasts within the companies. Companies' attitude and awareness of public support for networking seems to be very different. It might be that, similar to the Belgian food case presented by GELLYNCK and VERMEIRE (2009), a more targeted approach is needed according the capacities of the companies. Another challenge is related to coping with the sometimes diverse interests of individuals and organizations in the network. The participation in SFINs activities is handled by a number of 'enthusiasts' at the companies, these tend to act as gatekeepers, in many cases not willing or not being able to spread the word within their organization.

Life science

The life science cluster in Scania represents one of the most fast growing niches in the regional economy the past couple of decades. It draws on long traditions through the presence of several large pharmaceutical companies. In the mid 1990s a cluster initiative, Medicon Valley Alliance (MVA), was put in motion with the aim to stimulate industry-university linkages and bi-national (Swedish-Danish) interaction. The initiative has contributed massively to the development of the cluster, not least because of its power of attraction on venture capital, research funds and human capital. Previous studies though indicate that the initial attempts of stimulating industry-university linkages within the region, as well as local firm-firm linkages, has been gradually supplemented with heavier focus on promoting global visibility (MOODYSSON, 2007). Part of the rationale for this change of focus was that the organization behind the initiative gradually realized that they were unable to affect the formation of networks among the local actors (BENNEWORTH et al., 2009). The initiative could not intervene in the professional networks of their target population; it was unable to become a natural part of their frame of reference.

Interviewed companies are mostly involved in medical and chemical life science. Their innovation activities are related to products such as new drug components, medical diagnostics, and cosmetics. In order to achieve their goals they have improved the ways in which they conduct research (introduce new processes) and/or changed their organizational structure. Some of the companies with already developed products also entered new markets or broadened the scope of their research areas. In many cases it is actually hard for an observer to delineate between basic research and product development since these are so strongly integrated. Also clinical practice serves as an

important part of the innovation processes, not least in the phase of verifying the new products or processes. The main characteristics of this industry with regard to the organization of innovation activities can thus be summarized in the following way. University-industry linkages are crucial, however not primarily on a local scale but also through global linkages. Knowledge exchange as such allows long distance relations, and the knowledge transferred is largely embedded in the specific skills of key personnel. Another key feature of the networks, besides being globally configured, is that they, at least in initial stages of development, to a large extent draw on interpersonal rather than inter-organizational relations. The literature usually refers to such networks using terms like epistemic communities (HAAS, 1992). In later stages of development these networks transform into more established, and strongly regulated, alliances, usually involving university actors and small research oriented companies, however being led by large companies with sufficient financial resources for carrying out long and complex development processes with a high risk of failure (MOODYSSON and JONSSON, 2007). Yet, key individuals remain crucial knowledge providers. In this respect the life science sector displays similarities with the food sector, however the key individuals are in this case less 'gatekeepers' than holders of very specific technical and/or scientific knowledge. The long term success of regions hosting strong research environments in the field of life science stand and fall with the ability of sustaining this key fraction of human capital in the region.

The structured interviews reveal that companies are generally well aware of different policy initiatives. The situation is a little different when it comes to use and benefits. Four companies did not use any support program at all mostly because of lack of time and because they could not see how their firm could benefit from participation. Three companies were official members of Medicon Valley Alliance, but could not specify any benefits out of it. Benefits of regional activities supporting life science development were indicated by 24 companies. The three most available benefits are access to market knowledge, sharing of laboratories and sharing of knowledge with customers. The biggest needs perceived by firms are financial support, help to find partners and education and training of employees. So, like in the cases of media and food, there is a mismatch between what companies need and what it is available in the region.

Help to find partners are, as the two previous cases also illustrated, quite complicated to provide. Firstly, companies are mostly interested in partnership for real problem solving and actual project group formation rather than open ended social networking that is provided through conferences and seminars. Like in the case of media, social networks and informal knowledge exchange are created through personal contacts and professional communities without a need, nor possibility, for top-down support initiatives. However, finding partners for actual problem solving and project group

formation require very specific competences from the ones that provide this support. Such competences are held primarily by key employees within the companies. Thus, in similarity with the other two cases, policy initiatives do not affect the regulative dimension of the institutional framework. This is very much defined by the national government (e.g. laws applicable to all regions) and the specific regulations stated by the Food and Drug Administration and the Swedish Medical Products Agency. However, the creation of MVA itself, its activities during the first years after its establishment and the strong support received from both the Swedish and Danish central administrations, has had an influence on the normative institutions of this subsection of the regional innovation system. Many companies in this sector, especially the larger and more successful ones, feel 'obliged' to be part of the network (it became a norm) even when the benefits to the firm are not clear. In this way the influence of the policy initiative on network formation could be described as successful. However, since these 'obligated' interactions seldom are accompanied with real knowledge exchange, and even more seldom with business transactions, the outcome is more debatable. Instead of responding to the encouraged network formation between firms and universities in the region, several of the firms, especially in the Swedish part of the region, display alienation. Furthermore, while this normative pressure reaches the organization (in particular on the middle management level) it usually does not affect the key individuals within the companies.

Discussion and conclusions

Looking at the concrete activities of the regional policy initiatives targeting three different regional industry clusters, they prove to be very similar in scope. They follow the common sense formula for cluster organizations derived from the literature. Main focus is geared towards promoting the formation of coherence and collaboration in local networks, especially between industry and academia. The rationale for this strategy is that such networks are assumed to promote knowledge spillovers, innovation and the formation of new companies. None of the initiatives have presented any effect assessment of these activities, but the general opinion among stakeholders reflects strong confidence in the long term results. However, firms and researchers targeted by the initiatives provide a slightly different view. Their initial enthusiasm partly diminished when several of the commercial actors gradually realized that network promoting activities without substantial output in terms of new formal collaboration or business deals were hard to justify, and academic actors felt a growing alienation. This can partly be explained by the mismatch between the generic focus of these network promoting activities (which is necessary to attract a critical mass) and the increasingly specialized demands identified by the actors, especially the key individuals in the media and life science companies. In addition to network promotion, much attention is paid to formulating strategic plans. Usually these are manifested in more or less concise mission and vision statements. An

important effect of these, besides branding the region and the initiative, is the establishment of a shared vision among the regional actors. Surprisingly though, these strategies are fairly general, despite the widely recognized insight that such strategies must be attuned to and embedded in the specific needs and available resources of respective region. Furthermore, it seems like the more the organization in charge of the initiative grows (in size as well as influence), the more general the strategies become. At the same time, the opportunities for alternative measures being implemented in the region decreases since these platforms gradually develops into 'monopolies' for regional sector specific policy support, acting as gatekeepers and nodes in which the vast majority of available support measures are allocated. A general opinion among actors targeted by these three initiatives is that they are good for the region, but often of limited value for the firm. The firms support the initiatives because of this perceived positive impact on the region, but in the long run they consider withdrawing from their engagement and focusing on their core activities.

A dilemma rising from the way in which these activities are organized is that the policy initiatives gradually transform from more or less bottom-up managed and unregulated umbrella organizations towards more formal bodies displaying similar patterns of structures and hierarchies as regular organizations (e.g. companies). This is a common phenomenon in the evolution of networks (BOSCHMA and FRENKEN, 2006) which, in turn, leads to a situation in which the initiative, created for the purpose of stimulating renewal, fails to fulfill this aim. Linking back to the basic objectives identified by OUGHTON et al. (2002), it is manifest that too strong efforts towards shaping coherence and collaboration through inclusion trig a counter reaction which, paradoxically, hampers the coherence it is set to support. This can be explained by the unavoidable need of creating hierarchies to be able to carry out large scale programs. In addition to such organizational factors another consequence works in the same direction: formalizing the initiative in an organization automatically leads to demands on consensus. This, in turn, creates a need for more general activities which reduces the applicability for single actors. Consequently, they resign from participation.

To sum up, this paper illustrates that different industries have different innovation practices and that regional capabilities are the sum of very diverse capabilities embedded in various actors within the region. Additionally, the paper reveals that regional policy makers' possibilities to influence firms' networks seem to be limited. Despite that, the promotion of networks, mostly through social interactions, is at the core of all three analyzed initiatives. However, organization of innovation includes more aspects than knowledge exchange through social networking. Regarding next generation regional innovation policy, two main guidelines can be suggested. First, regional policy initiatives should become more specific. Regional policy makers should take differences between

industries seriously into account and establish sector and firm customized approaches into their programs. Clear tools are needed to assess the needs and demands of their target population. This is closely related to the second guideline. In order to meet these specific needs, regional policy makers should broaden the focus of their activities and include support for various aspects of the organization of innovation, not only, maybe not even primarily, network promotion.

Finally, both policy makers and academics would benefit from better defined tools to evaluate companies' needs and demands. An improved conceptual discussion defining the position of regional policies in the institutional framework of the region, as well as combinations of different methods, would add interesting insights to the topic. These are just some of the questions to be addressed in future research.

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