Chapter 7

Enterprise Embeddedness and Industrial Innovation in Spain: An Overview

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Introduction

Research on clustering and enterprise embeddedness in developed countries has been concerned mainly with economic activity in metropolitan areas. However, enterprise development and long-term economic growth also occurs away from these urban areas, in rural districts, based on the activities of small and medium sized enterprises (SMEs). The purpose of this chapter is to analyse the local area inter- and extra-firm networks of businesses in the non-metropolitan and rural districts in Spain that have been economically successful in the past decade, and to identify the role of embeddedness and innovation in shaping that success. Elements of the embeddedness model of local growth are clearly evident in these regions, and the overview presented in this chapter draws together and develops a critique of the evidence on the creation and success of inter-firm network structures in these non-metropolitan regions of Spain.

There is an extensive literature that suggests that inter-firm networks are central to enterprise innovation in local areas (Granovetter 1992, Grabher 1993, Braczyk *et al.* 1998, Taylor 2001). SMEs, especially family firms, often have limited capital to support research and development. Innovation among these firms is, therefore, dependent on the extra-firm networks to which they belong, that comprise other firms and both public and private institutions (Yeung 1994). Inter-firm collaboration and cooperation, based on trust, reciprocity and loyalty, creates embedded network structures that are inclusionary, persistent and relatively stable.

These social relationships between firms, reinforced by proximity, are argued to create long-term growth in local economies.

The argument presented in this chapter is divided into five sections. Following the introduction, Section 2 explores evidence on the nature and extent of innovation within non-metropolitan local production systems in Spain. Section 3 focuses on local firms' market strategies in these Spanish regions, and Section 4 explores the role and nature of institutional support in the processes of embeddedness. From this discussion, the concluding section poses a range of questions and develops a critique on embeddedness in the Spanish context, and the role that policy can play in shaping and stimulating these processes of growth and change.

Industrial Innovation and Local Production Systems in Spain

A range of processes can be identified as operating in non-metropolitan clusters in Spain that have operated to create their current success. The available evidence would suggest that there are four dimensions to these processes: initiation, promotion, network formation and innovation. In the following sections, each of these processes will be reviewed in turn.

The Initiation of Regional Industrialisation and Processes of Firm Formation

The existence of elements of an industrial tradition in a region is often seen as a source of positive externalities that produce spill-overs, supporting new network formation and reducing system uncertainty (Sabel 1987, 1989, Piore and Sabel 1986, Becatini 1988, Bartolini 1989, Bellandi 1989). Marshallian industrial atmosphere in most old industrial production systems was created even before the industrial revolution. In some Spanish regions, current manufacturing networks were initiated by proto-industrialisation dating back to the Middle Ages (Pérez 1999, Pallarés and Vera 2000). These initial proto-industrial networks created industrial cultures in those regions based on sectoral specialisation. Rueda's current industrial culture, for example, has its origins in the production of fine wines in that district (Sánchez *et al.* 1999).

Evidence would suggest, however, that in Spain in the 1990s, industrial tradition was not necessarily a basic factor stimulating growth and new firm formation in local economies. Some authors agree that industrial tradition generates tangible and intangible assets in local

economies (Méndez *et al.* 1999, Pallarés and Vera 2000), but it does not operate as a propulsive mechanism in all districts. Alonso and Rodríguez (1999) argue, for example, that there was no tradition of a successful clothing and textile industry in Galicia before the last decades of the twentieth century, only tailors and seamstresses who worked to satisfy local demand without competition at the national level.

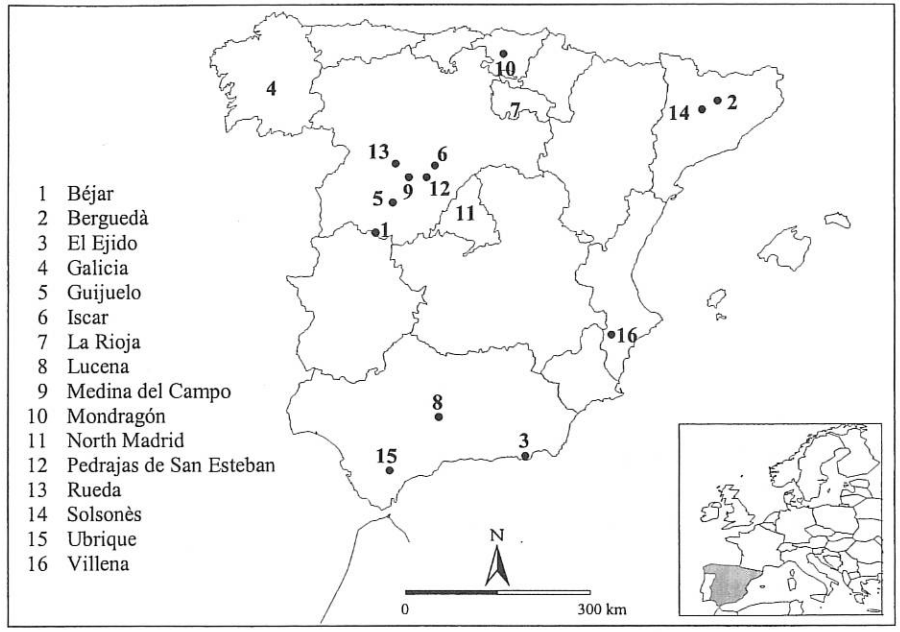

Figure 7.1 Non-metropolitan clusters of embedded enterprise in Spain, 1999

Méndez *et al.* (1999, p. 226), however, suggest on the basis of evidence from Castilla-La Mancha, that 30 years of industrial tradition is enough to create strong local externalities and initiate cumulative growth in a region. Indeed, in some regions in Spain, industrial network structures were initiated as recently as the 1970s in, for instance, the textile and clothing district in Galicia (Alonso and Rodríguez 1999) (see Figure 7.1). In Villena, a similar industrial network was created in the footwear industries in the 1950s (Martínez and Alcazaras 1999).

Empirical research suggests that regional industrialisation develops and consolidates, in the Spanish context at least, when three sets of conditions prevail. First, it occurs when there is supra-local market expansion. Second, positive factor conditions in an area, such as a pool of labour or venture capital, may also promote industrialisation. And third, industrialisation can be initiated when endogenous firms stimulate imitative behaviour both inside and outside a particular region (Méndez *et al.* 1999, Pallarés and Vera 2000). This is what happened, for example, in the Galicia region, as international demand for its firms' textile and clothing products grew, and endogenous capital and know-how accumulated, attracting further investment from other parts of Spain (Alonso and Rodríguez 1999). Ondátegui (1999) drew similar conclusions from a study of metropolitan clusters in the Madrid region. He found that new firms were created in local production systems when existing firms' markets began to internationalise (even though they were unsure as to how to cope with international competition), when firms acquired new technological knowledge, when a pool of skilled labour developed, and when a good communication system existed.

Experience in Spain also suggests that local agricultural resources can also act as a foundation for the development of local production systems in non-metropolitan areas. In some cases, agriculture has been the foundation of value-adding chains, but only when other factors have been present. The wine sector in Rueda is an example of this process (Sánchez *et al.* 1999). The wine producing district of Rueda was on the point of collapse at the beginning of the 1990s. However, the combination of *verdejo* grapes, good soils, modernised wineries and intangible elements like tradition and local know-how brought growth to the district in the late 1990s fostered by cooperation. Equally, in El Ejido the modernisation of agriculture brought local growth (Silva 1999). Here growth is based on labour-intensive horticulture and greenhouse production within a coordinated agro-industrial supply chain of growers, food processors and distribution firms. This growth, however, has had its down side: dependence on cheap north African immigrant labour willing to tolerate low living standards; over-exploitation of aquifers together with soil salinity problems; problems caused by the extensive use of chemicals; the creation of a huge volume of vegetable waste; and the transformation of the landscape into a monotonous 'plastic sea' through the use of plastic greenhouses.

However, not all these conditions occur at the same time in all local production systems in Spain, and it is also clear that other factors are important in stimulating local growth. Local production systems in Spain are based principally on SMEs, endogenous capital and only few

transnational plants (Méndez *et al.* 1999, Pallarés and Vera 2000, Caravaca 1999). Endogenous economic development in local regions in Spain is strongly affected by external processes, especially competition from newly industrialised countries (NICs), general market cycles and the processes of the global market.

Factors Promoting Growth in Local Systems

In most non-metropolitan local production systems in Spain, SMEs have been the engine of growth, and the modern business networks they contain were initiated in the 1960s and 1970s. Since then, the growth and decline of those regions has paralleled the success of the local manufacturing sector. Most of the regions have a lead sector, for example the wood sector in Lucena (Pérez 1999) and the textile sector in Berguedà (Pallarés and Vera 2000). However, recession in the early 1990s brought the restructuring of these older lead sectors, forcing diversification. In Lucena, restructuring saw the emergence of graphics and industrial refrigeration, and in Berguedà the emergence of metal working and food industries. As a result, while these districts lost population at the beginning of the 1990s, by the end of the decade they had high rates of regional economic activity, increasing occupation rates, low unemployment rates, and rising rates of GDP per capita.

The Formation of Networks of Relationships in Local Systems

Evidence would suggest that the growth of local economies in Spain is based on the creation of enterprise networks built on trust. These networks give cohesion to a district's sectors, cement ties with external markets, guarantee access to product innovation, and foster competition. Local production systems in Spain also appear to have a number of distinguishing characteristics. First, the regions within which these systems occur tend to have a medium-sized city at their heart that supplies urban services and dominates a local hierarchy of settlements. Second, the success of local production systems is based on endogenous growth, with the capital generated by local entrepreneurs being reinvested in the system. As part of this process of growth, entrepreneurs improve the quality of their designs, increase capacity and exercise control over distribution. At the same time, they create extensive subcontracting networks (Alonso and Rodríguez 1999). Third, personal relationships between entrepreneurs capitalise on

experience and foster local knowledge flows. Fourth, the commercial success of local entrepreneurs creates a local feeling of pride that may even spread to the labour force. In Lucena, for example, it has been reported that labour is willing to work extended hours and to accept reduced vacation time. Entrepreneurs in these localities express their local pride by consuming locally, and the regional feeling that is engendered has been summarised in the phrase, 'We are eating the national market' (Pérez 1999, p. 45).

The processes creating success have not been the same in all regions. In some places, supply side processes have been important, especially the relocation of mature, labour intensive and energy intensive industries seeking lower labour costs (Méndez *et al.* 1999, Caravaca 1999, Alonso and Rodríguez 1999). New labour-intensive ventures created in this way – by relocation, as joint ventures or green field investments – tend to create ephemeral jobs with precarious labour contracts, supported by home-working (González 1999). The local production system in Pedrajas de San Esteban, for example, is based on firms using local female labour, without any element of innovation (Sánchez *et al.* 1999). On the demand side, firms may establish contracts among themselves to buy in supplies for the local production chain, but these arrangements do not occur in all local production systems. Indeed, relationships beyond local production networks may be important to stimulate product and process innovation and R&D, an innovation in management (Hernández 1999).

Territorially, successful local production systems also appear to need local institutional support, for example through the provision of industrial space and technology centres, and in a local cohort of both similar firms and sectorally diverse firms (Mecha 1999).

Innovation Processes in Local Production Systems

New and dynamic firms in a region generate positive externalities and create an innovative milieu within a local production system that is attractive to new firms (Pérez 1999). Innovations in products, process, logistics and technology, when combined with flexibility, create comparative advantage and global competitiveness in a local economy (Pallarés and Vera 2000). This innovation can be both defensive (to meet new market demands) and offensive (to create new market conditions). The combination of these different strategies has been recognised in the success of the La Rioja region by Climent (1999). Here, innovation in the machinery used in production increased product quality. It also increased

production and introduced new products to an educated global market. Innovations are, in fact, a combination of the knowledge of the entrepreneur and, the interaction between entrepreneurs and clients (Ondátegui 1999).

Local branding, through the use of a trademark, can also help a local production system penetrate international markets by promoting the idea of good quality, innovative design and creativity. This is a strategy that has been adopted successfully in Rueda in relation to the production of fine wines (*Denominación de Orígen Rueda*) (Sánchez *et al.* 1999), in Ubrique for the marketing of leather products (González 1999), and in Galicia to promote textiles and clothing products (*La Moda Gallega*) (Alonso and Rodríguez 1999).

Exogenous investment can also revitalise older firms in local production systems through joint ventures or by setting up green field enterprises. In Rueda, for example, exogenous and endogenous investment combined to create their own wineries and to vertically integrate vineyards and the wine industry in the region. Unlike transnational investment, this type of exogenous investment becomes closely involved in the local production system of a region.

Improvements in telecommunications technology have reduced the impact of distance on the operation of local production systems, though they have not altogether eliminated the constraints it imposes on the physical flows of goods (Ondátegui 1999). Thus, Spanish local production systems need to be reasonably well connected to their most important local and national markets in order to be successful. Historically, a lack of roads has left some regions isolated, though recent public investment has gone some way to alleviating this problem. Thus, Sánchez *et al.* (1999) claim that Rueda's relative position on the Castilla-Léon axes of communication, that connect Rueda with the Castillian industrial belt and with Madrid and La Coruña, is one of the basic pillars of the region's production innovation.

The Market Strategies of Firms in the Spanish Regions

Entering international markets and gaining an international reputation are essential processes creating the innovative milieu and inter-firm network of a local production system. Most firms within Spain's local production systems sell on international markets and are competitive by international standards (Mecha 1999). The Rueda region, for example, which historically sold wine to local and national markets, has produced a low grade white wine that is competitive on international markets, principally in Germany

and Italy (Sánchez *et al.* 1999). However, most specialised local production systems in Spain compete on national and international markets on quality and design, and not on low cost. Galicia's textiles and clothing output is aimed at medium to high quality export markets (Alonso and Rodríguez 1999), and Rueda produces fine wines (Sánchez *et al.* 1999). Sophisticated national demand in Spain has driven up product quality, presentation and distribution, so they now meet international standards (Alonso *et al.* 1999)

In contrast, some SMEs in local production systems are tied into major distribution chains. This arrangement offers both advantages and disadvantages. Certainly, it provides the firm with steady and secure demand and helps to achieve a level of quality control. However, excessive dependency is a threat to the firm because its competitive strength is low cost production rather than a brand name, which reduces added value (Méndez *et al.* 1999). It is the buyers who tend to control these supply chains, reducing the firm's discretionary power over things like transport (Mecha 1999). What is more, the firm can have no independent market strategy, increasing its vulnerability. The wood and furniture industry of Medina del Campo suffers all these distribution chain problems (Sánchez *et al.* 1999).

Rivalry between local firms can stimulate innovation and improvement in the specialised products of a region. Exogenous investment can also have the same effect, demonstrating alternative strategies for production and competition. Thus, Marqués de Riscal, an outside investor that moved into the Rueda region, introduced a sauvignon grape that has become the foundation of the local wine industry's international competitiveness. Smaller wineries have imitated the company's approach and have renovated their production facilities. This has allowed them to produce fine wines themselves and to meet the quality demanded in international markets (Sánchez *et al.* 1999).

Institutional Support and Enterprise Embeddedness in Spain

The consolidation and continuing success of local production systems in Spain has also been shown to require in some circumstances the support of local and non-local institutions from both the public and the private sectors. These institutions have the potential to promote collaborative and cooperative relationships, based on trust, reciprocity and loyalty, and to stimulate processes of network formation in incipient local economic clusters (Mecha 1999). Research in Spain has recognised a range of agencies that promote local economic development that are public as well as private and supra-local as well as local (Méndez *et al.* 1999). In some regions, these institutional mechanisms have been active in generating innovation, creating trademarks, promoting cooperation and developing a cordial climate among networked firms. In wine production in Rueda, firms have received a lot of technological support and help with commercial distribution from public institutions (Sánchez *et al.* 1999). Indeed, a number of researchers have concluded that the absence of these institutions and the support they offer is characteristic of the less developed parts of Spain (Pallarès and Amorós 2000, Pallarés and Vera 2000).

Local culture is at the heart of this supportive tissue of institutions in some Spanish regions. In Lucena, for example, the social relationships of the local cluster that has been built on the wood and furniture sectors are cemented and reinforced by the processions (*procesiones*) that are organised during Easter each year (Pérez 1999). This local cultural event is organised by local entrepreneurs and their workers, and serves to consolidate and strengthen human and social ties that cut across the hierarchies of owner and worker. This identification of people with a place is also evident in the economic development of the Mondragón region, focused on the locally deep-rooted Basque culture and its regional language. In this particular instance, the impact of local culture was magnified by the activities of a local priest who strove to develop the capabilities of local people, leading to the creation of cooperative ventures and enduring economic projects (Torres 1999).

In contrast, there are successful local production systems in Spain that have no such local supportive institutional tissue (Sánchez *et al.* 1999). In the leather industries of Ubrique in Andalucia, for example, there is flexible specialisation and strong individualism and only incipient support through local social and institutional agents (González 1999). In this district, cooperation between firms is hard to achieve even though they are linked through outsourcing and subcontracting strategies within the local value-added chain. Competition is strong in Ubrique over innovation in materials and in product design, and this has built a local entrepreneurial spirit that has had significant positive spin-off effects.

Individualism and competition also typify inter-firm relationships among the textile firms of Bejar. Cohesion in the cluster in this district derives only from the necessities of the local technical division of labour, and the first signs of cooperation only appeared in the district in the later 1990s (Sánchez *et al.* 1999). What is more, the institutional support of government, in the form of economic incentives, has not yet managed to expand the markets for this district's products into the international arena. In the footwear district of Villena, it has been the process of spill-over from

neighbouring regions, without institutional support, that has created success. This success has combined the manual skills of 'grupicos' – small groups of three workers who had acquired their skills in neighbouring regions' footwear firms ('Valencianas') – and 'capitalist' partners from agriculture, wine distribution and banking, who had access to finance and expertise in marketing (Martínez and Alcaraz 1999). Individualism has similarly underpinned textile and clothing development in Galicia, but without inter-firm cooperation and institutional support.

Evidence would suggest, moreover, that firms in Spain's non-metropolitan industrial districts do want institutional help, but of a very specific type. Principally, they want government assistance with the one factor that most often holds them back – a shortage of skilled labour. This was the case in Berguedà at the end of the 1990s when entrepreneurs asked local educational institutions to support them by establishing specialised training courses (Pallarés and Vera 2000). In other situations, the role demanded of local institutions has been to assist firms to improve research, to increase the quality of production. This, for example, was the demand placed on the Estación Enológica de Castilla y León, to provide direction on grape harvesting and quality control of fine wines.

Conclusions

From the discussion of this chapter it is clear that the embeddedness concept, as the basis for local economic growth and clustering, is an elusive idea. The examples from Spain identify a range of factors that might promote economic growth and development of local production systems in non-metropolitan areas, though there is no consistency from example to example: no clear identification of what conditions are necessary and/or sufficient to initiate and sustain that local growth. In a classic sense, the embeddedness model of local economic growth and cluster formation is built on a set of stylised facts that raise more questions than they answer. Some researchers stress the roles of innovation and collective learning. Others emphasise tradition and collaborative network practices. Moreover, as stylised facts, what is 'innovation' and how should 'tradition' be interpreted? When does cooperation supplant competition, and what are the limits of 'trust'? Indeed, how do learning mechanisms arise and persist?

From the present analysis, three overarching questions arise concerning the propositions of the embeddedness model. First, how are embedded relations initiated in a local production system? In this context, is industrial tradition a necessary and sufficient condition? What roles are

played by sectoral specialisation, specialised local labour pools, locally available venture capital, and market expansion, for example? A fundamental problem of the model is that it is a-temporal and elaborates processes only after they have been initiated. Second, how is innovation created and spread through local production systems? Is it simply through processes of circular and cumulative causation (Myrdal 1956, Friedman 1972), and how do these processes match with the needs and strategies of individual firms? Indeed, how do embedded processes of innovation marry with the processes of spatial uneven development that are basic to the capitalist system? Third, what mix of factors promotes local growth? Success in non-metropolitan areas appears to relate to the operations of SMEs, endogenous capital, sectoral specialisation, and medium-sized cities as hubs of relational flows (financial, political and social), and social ties between entrepreneurs and labour within districts (including local pride). It is difficult to identify 'one best way'.

Nevertheless, the present analysis of non-metropolitan local production systems in Spain suggests that there may be a significant role to be played in their initiation and promotion by the institutional support of government, in the shape of policies and programmes to promote local economic development (see Alonso *et al.* 1999). On the basis of the empirical studies on Spain reported in this chapter, it can be suggested that two levels of policy might be appropriate to achieve these local growth goals. First, at the firm level, there is the need for financial support, and programmes to build the skills of entrepreneurs and their workers (Pallarès and Amorós 2000). Such policies also need the support of databases of information on competitors, markets, technology and available public incentives, as well as the creation of local enterprise 'incubators' to create new firms. Second, at the network level, it would appear that programmes can be usefully used to promote group identities through participation in fairs and specialist exhibitions (Méndez *et al.* 1999), and support regional technology centres. They can be used to promote innovation programmes, and also to promote regional urban centres to strengthen local urban demand for a production system's output.

This analysis of embedded inter-firm relationships in non-metropolitan Spain offers clear support for the processes that drive the embeddedness model of local growth. With the right combination of local circumstances, in terms of resources, entrepreneurships, labour supply, networking and social cohesion, it would appear that clustering and embeddedness can bring significant and dynamic growth to non-metropolitan regions. Also, a supportive tissue of institutions has also been important in promoting and shaping that growth.

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