

## The Role of Institutional and Territorial Factors in Innovation: the Case of the Spanish Footwear Components Industry

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**ABSTRACT:** The industrial fabric of the province of Alicante has long been made up of various types of agglomerations of companies, including local productive systems, industrial districts and clusters. These enterprise systems are currently facing challenges to their competitiveness brought about by global markets and transformations in technology and production. In this paper we analyze the transformation processes introduced by businesses in the footwear components industry and the importance of the Regional Innovation System in the recent economic context. We demonstrate how companies in the footwear sector have sought various alternatives, especially innovation strategies, internationalization, diversification towards different productive sectors, and specialization in different market segments. We also analyze the role of the Regional Innovation System of the Valencian Community (Spain) (e.g. the Chamber of Commerce, technological institutes, universities and innovation policies) in these transformation processes.

**JEL Classification:** R30; R50.

**Keywords:** innovation; diversification; regional innovation system; industrial district.

### El papel del factor institucional y territorial en la innovación: el caso de la industria de componentes del sector calzado

**RESUMEN:** El tejido industrial de la provincia de Alicante ha sido y es un escenario de aglomeraciones de empresas denominadas de diferentes formas como sistemas productivos locales, distritos industriales, clústeres, etc. Estos sistemas empresariales se enfrentan a transformaciones tecnológicas, productivas y a mercados globalizados que plantean retos a su competitividad. En nuestro estudio ana-

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lizamos los procesos de transformación que han protagonizado las empresas del sector de componentes del calzado y la importancia del Sistema Regional de Innovación ante el reciente contexto económico. Mostramos como las empresas del sector han seguido distintas alternativas destacando las estrategias de innovación, internacionalización, diversificación hacia distintos sectores productivos, y especialización en segmentos del mercado. Y analizamos también el papel que juega el Sistema Regional de Innovación Valenciano (Cámara de Comercio, institutos tecnológicos, universidades, políticas de fomento de la innovación,...) en estos procesos de transformación.

**Clasificación JEL:** R30: R50.

**Palabras clave:** innovación; diversificación; sistema regional de innovación; distrito industrial.

## 1. Introduction

The need to innovate has always been an important factor in the survival of all types of organizations. In its broadest sense, innovation is understood as the transformation of processes that enable an organization to perform its tasks more efficiently and more effectively. From this perspective, innovation is synonymous with adaptation. As economic globalization has continued to develop, innovation has become a major ally for companies since it radically changes the sources of added value creation (Pavón and Hidalgo, 1997; Escorsa and Valls, 2005; Vázquez, 2005; Morcillo, 2006; Nieto, 2008; Puig and Debón, 2012). This situation has been reinforced by the impact of the financial crisis that began in 2007, which highlighted once more that it is no longer just companies that must compete with other companies from elsewhere in the world but also entire economic territorial regions, i.e. social and business ecosystems are also now competing on a global scale (Gómez and Vaquero, 2015). In this context, innovation has adopted a crucial role in today's economy.

To better understand innovation as a business strategy, case studies are needed that illustrate how this strategy has been incorporated in changing environments. As an object of study, innovation processes have acquired their own identity and have now become a consolidated area of research. However, this does not mean that further research cannot be conducted into certain issues related to the undoubtedly prominent role territory has acquired because of how it affects the incorporation of innovation into industry (Méndez, 1998). In this paper we present the results of a study conducted in a specific industry (the footwear industry) to determine the dynamics of innovation displayed by companies in a certain business ecosystem. We will attempt to determine to what extent these companies rely on the institutional context to implement their innovation strategies. By «institutional context», here we mean one of the components of the Regional Innovation System (RIS). In answering this question, we also aim to identify other key sources of innovation.

Our initial hypothesis is that the innovation dynamics of companies in the footwear components industry in a given socio-business ecosystem (the city of Elche) depend more on the network of inter-company relations than the use of institutional elements and resources. In other words, innovation is characterized more by the internal dynamics and logic of the business network, which to some extent are autonomous from the institutional framework.

Our analysis confirms our hypothesis that the informal and autonomous links between companies play a more important role in innovation than institutional factors, represented here by the entities and institutions of the RIS. Innovation also depends on factors such as market orientation (since exporting companies are more innovative) but not on company size (since no significant relationship exists between company size and innovation). A certain amount of cooperation within the business system is relevant when adopting an innovation strategy. In our case study, therefore, we discuss the notion of ecosystem of innovation (Navarro, Benavente and Crespi, 2016; Marquerie, 2016) (which is supported by cross-learning), the sharing of productive experiences, and a territorial location that serves as a framework for innovation (to some extent it also makes up for the institutional RIS deficiencies identified by the stakeholders themselves).

Following this introduction, we briefly describe the productive sector analysed in this study and report the high degree of business concentration in the footwear components industry in the province of Alicante, Spain. We then present several key concepts behind the theoretical framework we have used to analyse this sector. Next we describe our methodology and present our most important results. Finally, we provide a summary, by way of conclusion, discuss our findings, identify possible future lines of research, and make several brief recommendations for the sector.

## **2. The footwear components industry in Spain**

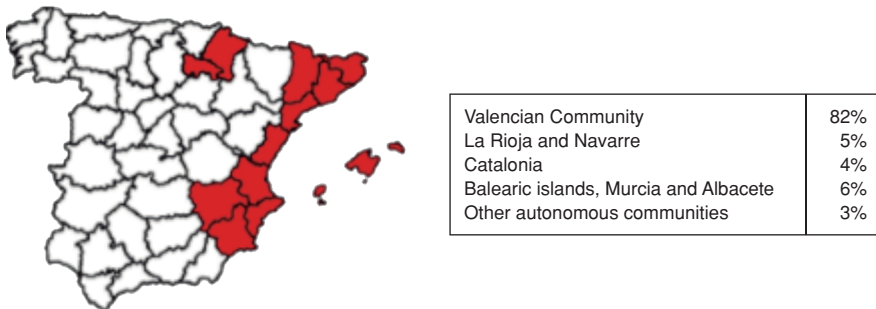
The Spanish footwear components sector is characterized by high territorial concentration. The Valencian Community is home to 82% of Spanish footwear components companies and 65% of workers in the sector, mainly located in the towns of Elche<sup>1</sup>, Elda-Petrel, Villena and Vall d'Uxó. Figure 1 shows the Spanish provinces that are home to the most companies in this sector.

A high percentage of the manufacturing industry of the Valencian Community is found in the province of Alicante. Production and exports are currently increasing in the footwear and footwear components industries both in the province and in the Autonomous Community as a whole. At the start of the 21st century, the footwear components sector was severely affected first by globalization (turnover bottomed out in 2005) and then by the recession. However, the footwear components industry

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<sup>1</sup> Of the companies in the sector located in the Valencian Community, approximately 60% are found in the town of Elche (AEC Activities Report, 2016).

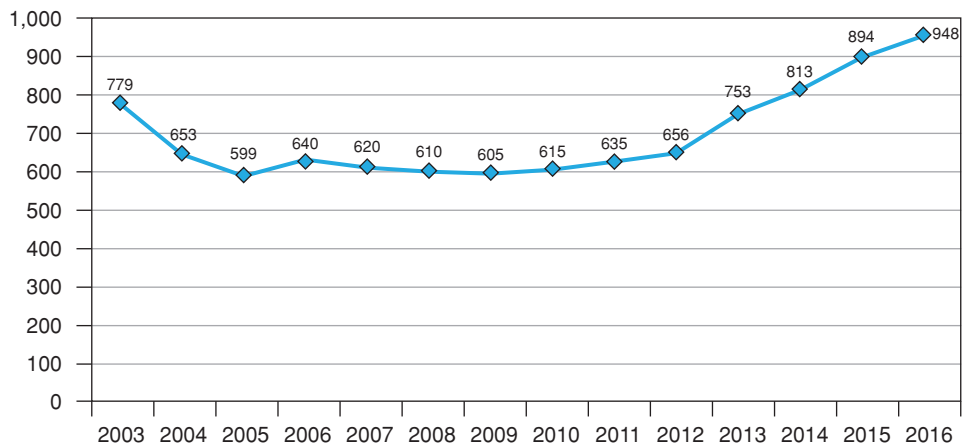
**Figure 1.** Autonomous communities in which footwear is manufactured



Source: Report on the activities of the Spanish Association of Footwear Components Companies (AEC 2016).

has recovered to the extent that in 2016 turnover was higher than it was when the recession began (see chart 1). In the 2015-2016 financial year, employment in the sector increased by 6%. The Spanish footwear components industry currently comprises over 1,200 companies, most of which are SMEs, which generate roughly 11,000 direct jobs and 3,500 indirect jobs<sup>2</sup>.

**Chart 1.** Turnover of Spanish footwear components companies that are members of the AEC. Million euros



Source: Report on the activities of the Spanish Association of Footwear Components Companies (2016).

The importance of the footwear and footwear components sectors in the town of Elche is clear from the following data (Elche Annual Statistics Reports, 2016): of the

<sup>2</sup> The Spanish Association of Footwear Components Companies (AEC) has around 210 affiliated members. Some of these members are groups of companies made up of subsidiaries representing a total of roughly 700 firms (AEC Activity Report, 2016).

8,024 companies operating within the municipality<sup>3</sup>, 857 (10.6%) concentrate their economic activity on the leather and footwear industry. Of the 73,763 workers affiliated to the Social Security system, 13,514 (18.32%) are employed in the manufacturing industry, of whom 8,926 (12.1% of all affiliated workers and 66% of industrial workers) are employed in the leather and footwear industries<sup>4</sup>.

It is this sector's economic importance to the region that led us to investigate how companies in the sector behave, what competitiveness strategies they employ, and how they are reacting to the current economic situation.

### 3. The Regional Innovation System

Several approaches, each adopting a different starting point and a different conception of innovation as a factor for development, have been proposed to explain how innovation is produced via different variables. However, whichever definition is used, any analysis of innovation needs to consider aspects related to company competitiveness, which we may call the economic/competitive approach, as well as aspects included in what we may call an ecosystem of innovation, which includes the social and institutional fabric in which the companies operate.

Innovation has therefore been analysed using different approaches and different conceptual frameworks, including local production systems (Garofoli, 1986), innovative *milieux* or learning regions (Maillat, 1995), industrial districts (Marshall, 1919), national innovation systems (Lundvall, 1992), regional innovation systems (Lundvall, 1992), clusters (Porter, 1990), and ecosystems of innovation (Marquerie, 2016). Each of the economic forms mentioned above is characterized by certain variables. However, each one considers innovation as the core variable for explaining not only the competitiveness of a company but also the generation of knowledge within a system or territory. Each of these approaches considers territory as the context of development from the socioeconomic and demographic perspectives as well as from the physical perspective.

The theoretical model that best fits the sector we are analyzing here is the Regional Innovation System. Navarro (2007) states that the concept of RIS appeared for the first time in a study by Cooke (1992). The author also indicates that no concept of RIS has yet been fully accepted. Asheim and Gertler (2005: 299) define a RIS as «the institutional infrastructure that supports innovation in the productive structure of a region». Cooke *et al.* (2003) assert that regional innovation systems are made up of two subsystems. The first of these is a subsystem of knowledge generation, which is made up of all the social, economic and educational agents (universities, technology transfer agencies and laboratories, etc.). The second is a subsystem of knowledge exploitation made up of companies that adopt the knowledge acquired and exploit it commercially by generating innovative goods and services.

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<sup>3</sup> Excluded from these numbers are those employed in agriculture, domestic work and fisheries.

<sup>4</sup> Elche Annual Statistics Reports, 2016. Labour market.

According to Heijs, Buesa and Baumert (2007), the concept of RIS has its origin in the merging of Marshall's industrial district theories (1919), Perroux's growth poles theory (1955) and Porter's clusters theory (1990). Heijs, Buesa and Baumert (2007: 32) cite Lundvall (1992) when defining a regional innovation system as the «elements and relationships that interact in the production, diffusion, and deployment of new and economically useful knowledge whose roots [are located] within the borders of a nation or state». Olazarán, Albizu and Otero (2008: 28) assert that the conceptual framework of RIS includes, for example, elements of evolutionary and institutional economics, social theories and economic geography, and terms such as industrial districts, innovative *milieux* and learning region. They also state that, within an RIS, «innovation is conceived as an interactive learning process both within the company and between the company and other organizations».

The concept of RIS is controversial or has been subject to criticism due, for example, to a lack of clarity and accuracy (Doloreux, 2004; Hommen and Doloreux, 2003; and Anderson and Karlsson, 2004). The above studies highlight the lack of clarity in the scope and influence of its components and agents.

Analyses of RIS have acquired a certain relevance in the literature on economics and the sociology of organizations since they include aspects related to territorial development. On the one hand, companies, as socio-economic agents, are capable of organizing amongst themselves, creating knowledge and innovation exchange networks, consolidating know-how, and producing through the prism of economies of scale. On the other hand, public authorities (both national and regional governments) began to create public and public/private institutional organizations to help the regional productive sectors. These include technological institutes, technology transfer offices, business innovation centres, and local employment and development agencies. Moreover, in certain regions the interrelationships between universities, scientific laboratories and the productive fabric have been stimulated in order to improve innovation, commercialization, management and training, etc.

In summary, a RIS is a set of public, private and public/private infrastructures whose objective is to support the productive fabric in a region through interactions between the economic and social agents in that region (to promote innovation, commercialization, and culture, etc.).

The Regional Innovation System with which the companies analysed in this paper collaborate includes the following institutional agents: universities (the Miguel Hernández University of Elche (UMH), the National Distance Education University (UNED), and the University CEU Cardenal Herrera), technological institutes, and organizations such as the Chamber of Commerce, the Valencian Export Institute, the Valencian Institute of Economic Research (IVIE), the Valencian Institute of Finance (IVF), the *Sociedad de Garantía Recíproca* (SGR) (mutual guarantee society), and the European Business and Innovation Centre (CEEI).

To characterize the RIS that collaborates with the companies analysed in this study, we began with the model developed by Fernández de Lucio, Gutiérrez, Azagra

and Jiménez (2000, 2001), which was based on Lundvall's (1992) definition of innovation and the Sábato triangle<sup>5</sup>. This model defines certain elements and divides them into the following environments:

- The scientific environment, which mainly consists of university research groups and public and private research organizations.
- The technological and advanced services environment, which encompasses companies that provide goods and advanced equipment and services, engineering consultancy companies, technological centres, and business research associations.
- The financial environment, which comprises the private financial entities (venture capital, seed capital, business angels, etc.), which aim to provide the system with the resources needed to develop and execute projects.

Fernández de Lucio *et al.* (2000, 2001) combined these aspects to characterize RIS as having a small company size, weak coordination between their institutional elements, poor adaptation of these elements to the productive environment, weak advanced services, a practically non-existent private financial environment, and a lack of leadership.

The strengths of a RIS, on the other hand, include their promotion of channels for establishing interrelationships between business agents, their proactive nature mainly in the commercial context, and their response to changes in market demand (though the degree of cooperation between **companies** could be extended). Other strengths include the existence of a technical culture in the productive environment and **their** absorption capacity, which has a direct effect on the innovation process.

## 4. Methodology

We analysed 41 companies in the Spanish footwear components industry. This analysis also served to describe this industry in Elche in the context of the RIS. Our structural sample included the largest companies in the sector, those with the highest turnover, and some of the smaller ones. The companies we selected were or have been members of the Spanish Association of Footwear Components Companies (AEC). Of these 41 companies, nine were in fact groups of companies, i.e. made up of at least two companies. The final number of companies in the sample was therefore 63. Every phase of the footwear production system was covered in our sample. All companies were representative of the sector because of their age, size or degree of innovation. Of the 41 companies we interviewed, 28 (68.3%) were current members of

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<sup>5</sup> The Sábato triangle is a scientific-technological policy model that states that an effective scientific and technological structure requires three agents. The first of these is the State, which develops and performs the function of designing policy as well as the scientific and technological infrastructure. The second is the scientific technological infrastructure, which produces and supplies technology. And the third is the productive sector, which requests the technology. The Sábato triangle indicates that if this structure is to work, there must first be a constant interrelationship between all the agents.

the Association, while 13 (31.7%) were not. Of these, some had once been members but for various reasons were no longer.

To determine the context in which the sector is based, we gathered information on companies in the sector from secondary sources (studies, data and reports). For our qualitative approach, we conducted semi-structured interviews with the managers of the companies in the sector in order to determine their strategies and their opinions of the various RIS agents. With this information we aimed to identify their needs as well as any perceived deficiencies.

Our semi-structured interviews covered the following areas:

1. Motivation for innovation. Why and how do companies innovate?
2. Instruments for innovation. What mechanisms do companies use to innovate?
3. External relations for innovation. What role do external agents play in the innovation processes of these companies?
4. Problems to innovate. What problems do companies find when innovating?
5. Public policies for innovation. How are public policies in support of innovation working?
6. Regional innovation systems. Evaluation of the Regional Innovation System.

The script for these interviews was inspired by the questionnaire used by Olazarán, Albizu and Otero (2008) in their study entitled «Innovation in small and medium-sized industrial enterprises in Gipuzkoa», which we expanded and adapted using another questionnaire from the research project entitled «Enterprise, organizational changes and new technologies in the petrochemical complex of Tarragona», by Purcalla *et al.* (2010).

From the variables contained in the script/questionnaire, we drew up *ad hoc* indexes that we later used to identify possible correlations between the variables. Table 1 shows the indices and variables from which they were created.

From these variables, which were mostly dichotomous and comprised Yes/No responses, we added the categories with affirmative answers in order to draw up specific indices, and constructed proxy variables that could be treated quantitatively. Similar analyses can be found in earlier studies by Purcalla *et al.* (2010) and Ahedo, Pizzi and Belzunegui (2014).

All indices were constructed from the original qualitative variables. The scores for the indices were obtained from the sum of the scores on the original variables divided by the maximum score a company could obtain in the summation. Only for the variable *Company market* (five response categories) did we weight the responses (attaching greater value to the responses *national market* and *international market*). For all indices, the maximum value was 1 and the lowest value was 0. The higher the value assigned to a company (the closer the value to 1), the more innovative the company is or the greater propensity to innovate, greater market intensity or greater use of the regional innovation system's resources the company will have. We should bear in mind that the final scores are not absolute in a quantitative or ratio sense but scores



**Table 1.** Synthetic indices

	<i>Variables of origin</i>
INNOVATION INDEX	<ol style="list-style-type: none"> <li>1. Innovation in technology.</li> <li>2. Innovation in marketing.</li> <li>3. Innovation in organization.</li> <li>4. Innovation in process.</li> <li>5. Innovation in machinery.</li> <li>6. Innovation in product.</li> </ol>
MARKET INTENSITY INDEX (MII)	<ol style="list-style-type: none"> <li>1. Exporting company.</li> <li>2. Company market (weighted in favour of national or international market).</li> <li>3. Innovation in marketing.</li> </ol>
REGIONAL INNOVATION SYSTEM RESOURCES INDEX (RISRI)	<ol style="list-style-type: none"> <li>1. Uses public programmes to promote innovation.</li> <li>2. Uses technological institutes.</li> <li>3. Uses ICEX/IVEX.</li> <li>4. Uses CEEI.</li> <li>5. Uses SGR.</li> <li>6. Collaborates with universities.</li> <li>7. Has worked with the ICO.</li> </ol>
PREPAREDNESS TO INNOVATE INDEX (PII)	<ol style="list-style-type: none"> <li>1. Employees receive incentives to introduce innovation.</li> <li>2. Collaborates with the Chamber of Commerce.</li> <li>3. Innovation programmes.</li> <li>4. Patents.</li> <li>5. Strategic innovation plan.</li> <li>6. Budget for innovation.</li> <li>7. Disseminates a culture of innovation in the company.</li> </ol>

Source. Authors' own.

whose origins are qualitative variables and whose interpretation must therefore also be qualitative and/or approximative.

The meanings of the various indices are as follows:

- Innovation index. This reflects whether the innovation is localized or general, i.e. how many environments it encompasses. Higher values indicate an innovation's greater degree of penetration.
- Market Intensity Index. This comprises three indicators, two of which are related to the product's target market while the other identifies whether the company innovates in marketing. The highest values are for companies that innovate in marketing and deploy strategies for market internationalization.
- Regional Innovation System Resources Index. This comprises a range of institutional resources that are available to companies. Combining the use of these resources leads to high values for this Index. Companies whose innovation depends more on these resources have higher values for this Index.

- Preparedness to Innovate Index. This is calculated by adding several innovation-related aspects, including whether the company has an innovation strategy (plans, programmes, budgets and an internal innovation culture). Companies with innovation strategies that are more clearly defined, explicit and incorporated into their corporate culture have the highest values for this Index.

These *ad hoc* indexes serve to define the profiles of innovative companies in the sector. The theoretical-empirical coherence of these indices is illustrated by the high positive and significant correlations between them, especially between the Innovation Index, the Market Intensity Index and the Innovation Disposition Index, as well as by the more moderate correlation between the Innovation Index and the Regional Innovation System Resources Index.

In summary, we first made a descriptive analysis of the variables contained in the script/questionnaire. We then conducted a bivariate analysis between the indices and some of the relevant variables to determine whether there was any association between them using a matrix of correlations and hypothesis tests based on contingency analysis.

## 5. Results

Our analysis reveals that several of the companies studied have been operating for over 60 years. Most (49%) are run by the second generation of managers, while 39% are run by the first generation and 12.5% by the third.

Most companies (58%) are small in terms of their number of employees, while 12% of the companies have at least 100 employees, 20% have between 26 and 49 employees, and 10% have between 50 and 99 employees.

Of these companies, 15% have a turnover of up to one million euros, 61% have a turnover of between one and five million euros and 24% have a turnover of over five million euros. Average turnover is 4.9 million euros, while the median turnover is two million euros<sup>6</sup>.

Turnover is increasing and positive for 65.9% of the companies, negative for 12.2% and stable for 22%.

Of the companies, 68.3% are exporters while the remaining 31.7% are not. There is no relationship between company size and whether it is open to external markets. There is also a statistical relationship between being an exporting company and having a positive trend in turnover, though the significance of this relationship is borderline (95% confidence interval). A positive trend in the turnover of a company could therefore be ensured by opening up to external markets.

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<sup>6</sup> As expected, there is a strong relationship between the number of employees, which is a measure of the size of the company, and the turnover. The Pearson correlation coefficient was 0.736.

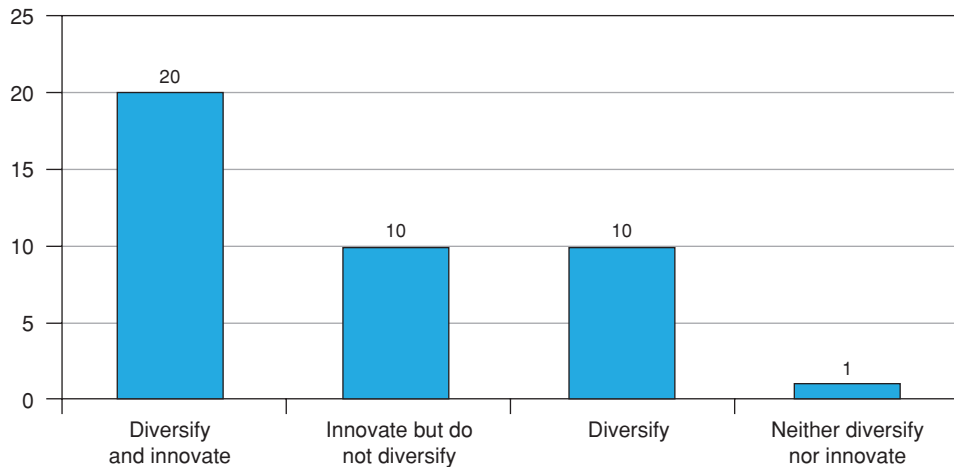
However, when the managers were asked what their company’s main market is, they qualified the exporting nature of their company somewhat: 41.5% said that their market is fundamentally international, while 39% prioritized the national market, 17% prioritized the provincial market, and 2.4% prioritized the regional market. These data show that many companies may be following an exportation strategy only occasionally or intermittently.

With regard to personnel, 36.6% of the companies employ university graduates in both administration and production, while 26.8% employ them exclusively in administration. Those employed in administration have degrees in Economics and Business Sciences or Diplomas in Labour Relations, while those employed in production and R&D have degrees in Chemistry and Engineering, etc.

We also found that 36.0% of the companies have no employees with regulated training. Nevertheless, the employees of these companies, known as ‘technicians of life’, do have ample experience (10-15 years in the company).

With regard to company strategy, there are no significant differences between the large, medium or small companies, i.e. size does not determine whether the company diversifies and/or innovates ( $p > 0.05$ ) (see Chart 2).

**Chart 2.** Company strategies



Source: Authors’ own.

Of the companies in our sample, 63.4% stated that it is the manager’s decision whether to innovate (in conjunction with their staff, middle managers and collaborators). Only three of the companies interviewed have a specific strategic plan for innovation, though 29.3% of them have a structure in place that is responsible for innovation in products, processes, marketing, organization and/or technology (in addition to university graduates, they have employees who are qualified on account of their experience).

The areas of innovation are shown in Table 2. Almost every company innovates in products (95.1%), while three quarters of the companies (75.6%) innovate in machinery. These two types of innovation are closely linked. Also important is innovation in processes (63.4%). The figures are not so high when it comes to innovation in organization (22%), marketing (2.4%) or technology (4.9%). These figures indicate that the technology used is versatile enough to develop both product and process innovations and that the purchase or acquisition of new machinery is not considered to be technological innovation since it is not generated within the system or company.

**Table 2.** Percentage of companies that innovate or do not innovate in certain areas

<i>Innovation</i>	<i>Yes (%)</i>	<i>No (%)</i>
In product	95.1	4.9
In process	63.4	36.6
In marketing	2.4	97.6
In organization	22.0	78
In technology	4.9	95.1
In machinery	75.6	24.4

Source. Authors' own.

We have calculated correlation coefficients from the Market Intensity, Regional Innovation System Resources, Preparedness to Innovate and Innovation indices in order to determine whether significant relationships exist between them (Table 3):

**Table 3.** Correlations between the indices

	<i>Market Intensity Index (MII)</i>	<i>Regional Innovation System Resources Index (RISRI)</i>	<i>Preparedness to Innovate Index (PII)</i>	<i>Innovation Index</i>
Market Intensity Index (MII)	1	.438** .004	.264 .095	.959** .000
Regional Innovation System Resources Index (RISRI)	.438** .004	1	.459** .003	.433** .005
Preparedness to Innovate Index (PII)	.264 .095	.459** .003	1	.273 .084
Innovation index	.959** .000	.433** .005	.273 .084	1

\*\* Correlation is significant at the 0.01 level (bilateral). Source. Authors' own.

The drivers of the Innovation Index are the Market Intensity Index and the Regional Innovation System Resources Index, both of which have clearly significant correlations with the Innovation Index. This may be taken as a result, though this type of analysis does not clearly reveal any unidirectional relations. The Preparedness to Innovate Index may act as an independent variable and as a dependent variable within the system. However, this index does not have a significant relationship with the Innovation Index, which indicates that while preparedness to innovate is generated and developed with a certain market autonomy, it is supported by the institutional elements of the RIS.

We found significant correlations between the Market Intensity Index and both the Innovation Index ( $r_{x,y} = 0.959$ ) and the Regional Innovation System Resources Index ( $r_{x,y} = 0.438$ ). We also found significant correlations between the Regional Innovation System Resources Index and both the Preparedness to Innovate Index ( $r_{x,y} = 0.459$ ) and the Innovation Index ( $r_{x,y} = 0.433$ ). Clearly, the greatest influence occurs between market orientation and intensity on the one hand and innovation on the other.

Cooke *et al.* (2003) reported that the RIS comprises two large subsystems. The first of these is a subsystem of knowledge generation, which is made up of all the social, economic and educational agents (universities, technology transfer agencies, and laboratories, etc.). The second is a subsystem of knowledge exploitation, which is made up of companies that adopt the knowledge acquired and exploit it commercially by generating innovative goods and services. The data we present below show that the companies make greater use of the second subsystem than they do of the first, which confirms our hypothesis that, when it comes to innovation, the companies operate with a certain autonomy regarding the institutional subsystem.

The vast majority of companies are generally aware of public programmes for innovation, though only 36.6% of them actually use them (see Table 4).

**Table 4.** Percentage of companies that use innovation promotion programmes

	%
Companies that use innovation promotion programmes	36.6
Companies that do not use innovation promotion programmes	63.4
<b>Total</b>	<b>100.0</b>

Source. Authors' own.

We found that participation in innovation promotion programmes is low. When the company managers were asked why they did not participate in these programmes, they outlined the following reasons:

«Document processing is far too complicated and bureaucratic. It has no bearing on reality. They treat what they offer as a necessity for our companies. We prefer more agile and simple preferential lines of credit rather than a subsidy. It is not company policy to apply for

a subsidy. The company has a plan mapped out. If a subsidy arrives, great, but if it doesn't, we have to carry on. The subsidy has to fit the company, not the other way round. They would need a separate department just to manage it. A large outlay is needed to be able to manage, develop and execute this kind of initiative» (Quotes extracted from various interviews).

When managers were asked whether, if public funds were unavailable, they would be prepared to invest in innovation, most responses were affirmative, i.e. the managers would innovate even if such funds did not exist. However, they also recognized that it is always better if incentive schemes are available for innovation. Some managers who use these schemes stated that they would be more cautious about innovating or that they would be affected financially. In general, however, 88% of the sample clearly expressed their decision to innovate regardless of whether such incentive schemes exist.

This reveals the impetus and importance the footwear components industry attaches to innovation processes and, more specifically, to product innovation and diversification. Both of these strategies are directly associated with the sources of innovation, which, as Table 5 shows, for this sector are mainly suppliers and customers.

**Table 5.** Sources of innovation

<i>Sources of innovation</i>	<i>YES</i>	<i>NO</i>
Customers	70.7%	29.3%
Trade fairs	31.7%	68.3%
Suppliers	61.0%	39.0%
Technological institutes	4.9%	95.1%
Other sectors of economic activity	7.3%	92.7%

Source. Authors' own.

The fact that technological institutes are hardly used as a source of information is striking. In fact, only 5% of companies stated that a technological institute is their source of innovation, while the main sources of innovation are customers and suppliers (70.7% and 61%, respectively). These data are consistent with those of Carter and Williams (1959), who argued that fluid communication with the market (customers and suppliers) is one of the most important factors behind successful innovation. These data also confirm that the innovation carried out by the companies is *ad hoc*, i.e. it is neither planned nor programmed (68.3% admit that they do not plan their innovation).

However, when asked whether they use technological institutes in their innovation processes, 58.5% of companies claimed to work or to have worked with them (though this does not mean that they are sources of innovation) (see Table 6). Moreover, practically one in two companies has a favourable opinion of technological institutes.

**Table 6.** Innovation tools used by companies

	%
Companies that use or have used technological institutes	58.5
Companies that have relations with universities	22
Companies that have relations with the European Business and Innovation Centre	7.3
Companies that belong to an innovation cluster	2.43
Companies that do not use technological institutes	41.5

Source. Authors' own.

All those interviewed knew about the IMPIVA network (now IVACE, the Valencian Institute for Business Competitiveness) but only 58.5% of the companies use or have used it. At first we believed that the Technological Institute for Footwear and Related Industries (INESCOP) would be the centre of reference for these companies. However, since the footwear components industry covers a wide range of products, the companies tend to use any technological institute that is more in line with the type of products they manufacture. Opinions on these agencies were diverse: as is reflected in the interviews, evaluations ranged from *Excellent* to *They do not provide enough support*.

Every company has heard of these agencies. However, after seeing their responses to the survey, we asked the managers why they do not use their services. The answers were wide-ranging:

«They could do more things, support us more. Their prices are high, and several private companies are more agile and more economical. They are only set up for the subsidies. In the end, they don't solve the problem and they have to find other ways to solve it. They do not support the various sectors. They are oblivious to what really goes on in the sector». (Quotes extracted from various interviews).

Collaboration with organizations of the RIS, which are at the core of the System's institutional context, may be considered moderate if we take into account how many companies actually work with them (see Table 7).

**Table 7.** Company collaboration on innovation with various organizations

<i>Sources of Innovation.</i>	<i>Percentage of companies that collaborate</i>	<i>Percentage of positive evaluations for the collaboration</i>
ICEX/IVEX	41.5%	19.5%
CEEI	7.3%	12.2%
SGR	2.4%	7.3%
Universities	22.0%	22.0%
Chamber of Commerce	39.0%	14.6%
ICO	12.2%	7.3%

Source. Authors' own.

The organizations with which the companies most collaborate are ICEX/IVEX (41.5%), the Chamber of Commerce (39%), and the universities (22%). However, in general, the evaluations by the companies are not positive (the evaluations were made by both collaborating and non-collaborating companies).

At this point it is interesting to know the companies' evaluations of the role played by certain public instruments in opening markets and promoting innovation. In general, the companies do not have a favourable opinion of organizations such as ICEX/IVEX or the Chamber of Commerce (see Tables 8 and 9), complaining that they are too bureaucratic and do not achieve the objectives for which they were created (e.g. commercial expansion). Some companies do believe they are necessary, however.

**Table 8.** Company collaboration with IVEX

	%
Companies that use or have used IVEX	41.5
Companies that have not used IVEX	58.5
TOTAL	100

*Source.* Authors' own.

We found that 58.5% of companies did not use the services of IVEX and that 61% did not use the services of the Chamber of Commerce. These data confirm the belief that the resources of the sector's institutional subsystem are under-used.

**Table 9.** Company collaboration with the Chamber of Commerce, Industry and Navigation

	%
Companies that use or have used the Chamber of Commerce, Industry and Navigation	39
Companies that do not use the Chamber of Commerce, Industry and Navigation	61
TOTAL	100

*Source.* Authors' own.

Among the reasons given for not using the services of IVEX, ICEX or the Chamber of Commerce, the managers cite:

«The network is impressive but it is not being used as it should. They are not agile organizations; it's more profitable to do it yourself than to wait for these institutions to respond. They are not very useful; there are private companies today that do the same thing much better, opening up markets themselves and providing business contacts. Our company is currently following another strategy. There's too much bureaucracy. They are not practical». (Quotes extracted from various interviews).



In line with our earlier observation regarding the *ad hoc* nature of innovation with little planning or structure, 56% of the companies reported that they self-finance their innovation, while 39% also obtain external finance. Only 2.4% rely exclusively on external finance for their innovation.

Interestingly, 88% of the companies value their location in the so-called 'Shoe Valley' very highly. Since this is a location where contacts between companies are established, level of proximity has a role in the innovation processes. The reasons given by the managers to justify their location are:

«It is our original market; we were born in this region. We have a wide range of suppliers that are a source of innovation (materials, and products related to their production). It's still part of their local and provincial market. We should not forget that the location with highest production of footwear in Spain is the Vinalopó Valley (Elche, Elda, Petrel, Villena, etc.). Qualified manpower is available for this production. Locating in this productive atmosphere generates positive synergies and competition between clients and suppliers, which leads to proactive attitudes on behalf of the companies. A wealth of knowledge and know-how and an entrepreneurial spirit have amassed in this region». (Quotes extracted from various interviews).

## 6. Conclusions

Our study confirms that companies in the footwear components industry basically use their relationships with other companies in the region to introduce innovation. This does not mean that other ways to promote innovation, e.g. collaborating with other agents (e.g. technological institutes) or attending trade fairs (usually overseas), do not take place. Companies also use consultancy firms and organizations that provide advanced services. Most companies also keep in direct contact with suppliers and customers, which helps them directly or indirectly to keep a close eye on technological developments.

Indirectly, they also employ an informal brainstorming process with their R&D teams and workers to discuss how a given process, product or innovation may be implemented. In most companies, this brainstorming activity does not take place through formally established processes but as the information becomes available and the company's needs arise. A reverse/re-engineering process is employed informally to obtain information about new products and processes. Since the companies in the sector are small or medium-sized, any knowledge about an innovation spreads quickly through the organization.

Depending on the type of product they manufacture, the companies' production processes involve using their own technology, adapted outsourced technology or outsourced technology (franchises). Producers of chemical products, and even some producers of machinery, use their own technology while companies that manufacture soles, laces, thread or leather use adapted outsourced technology.

The most important sources of innovation are customers and suppliers. One way to acquire innovation is by attending sectoral trade fairs or other fairs where a poten-

tial application exists for their products. We understand that this task may be part of a technology watch process. These innovation sources are components of the business network subsystem that forms part of the RIS. Similarly, only 5% of the companies in our sample stated that they use technology centres as their source of innovation, though most companies know about them.

Every manager interviewed said they were familiar with the IMPIVA network (now IVACE) and 58.5% of the companies reported using it. However, as we mentioned earlier, they do not use it as a source of innovation. Initially we believed, due to its name, that the companies would naturally use the Technological Institute for Footwear and Related Industries (INESCOP). However, since the footwear components industry covers a wide range of products, the companies tend to use a range of Spanish (e.g. AITEX, AIJU, IBV, AIDICO, ITENE, AIDIMA) or foreign (e.g. SATRA (Shoe, and Allied Trades Research Association)) organizations. The companies also employ the services of inspection, verification and testing bodies such as SGS or organizations such as the CDTI (Centre for Industrial Technological Development). We found that companies initially used the original institute for the footwear sector but after diversifying production joined other organizations whose products they believe fall more within their field of action.

The companies' overall assessment of the RIS, based on the responses of the managers we interviewed, is that it is important to have the support of all the entities, institutions and bodies that make up the RIS as an institutional subsystem but that these do not act decisively enough on issues regarding innovation in this sector. Technological institutes are undoubtedly important but, according to the managers, they should be closer to small and medium-sized companies and expand their range of activities from testing and trialling to also include the acquisition of subsidies. Nine companies in our sample (22%) have a relationship with a university. In general, however, there is little connection between the universities and the business world and so the synergies that could be developed between them are under-exploited.

The companies do not have a very favourable opinion of instruments such as IVEX/ICEX or the Chamber of Commerce, Industry and Navigation, whose objectives include expanding the markets. In our sample, 58.5% of companies stated that they have never used the Valencian Export Institute and 60.1% stated that they have never used the Chamber of Commerce. The companies complained that these organizations are not agile enough, are too bureaucratic, and do not fulfil the objectives for which they were set up, arguing that private companies are better at opening up markets and providing contacts. Some companies do see them as necessary, however.

According to the companies, public innovation policies have not worked as anticipated. The level of participation (36.6%) is not very high. Only 29.3% provided a positive assessment, complaining that they are too bureaucratic, that paperwork is too difficult to process, and that the companies have to fit the subsidy rather than the other way round. Some managers admitted that this may be due to a lack of knowledge on their part. They also expressed the opinion that it is better to have them whether they actually use them or not. Most managers (88%), when asked whether

they would innovate if these programmes did not exist, replied that they would innovate in exactly the same way.

In short, in this paper we have focused on the footwear components industry (mainly in the city of Elche) in order to analyse part of the business fabric of the Valencian Community. Among other issues, we have highlighted the strategies employed by these companies to tackle the financial recession. These include innovating within their sector and diversifying their products. Our data show that the companies base their innovation strategies mainly on formal and informal relationships between regional businesses, though relations with institutional agents of the RIS are not ruled out. However, these agents are less important for the innovative strategies of these companies. Indeed, companies have more confidence in their own internal dynamics than in the institutional agents operating in the region. For this reason they attach great importance to their location in the 'Shoe Valley' as a source of innovation. Location is therefore highly relevant as a space where multiple interactions between companies (suppliers and customers, etc.) can take place. The innovation strategies of these companies involve using all the resources at their disposal, including the institutional resources of the RIS. However, their inter-company relationships, their connection to the market via clients and suppliers, and the synergies produced through sharing a given location appear to be more important for them. This mode of operation and this way of meeting the challenges of innovation are consistent with the fact that innovation is largely implemented without a specific organizational structure or medium- or long-term planning.

In this paper we have studied a subsector of industrial activity in a specific territory. Our findings shed light on an extensive field that focuses on the interaction between the economic and institutional stakeholders responsible for territorial development. In future studies it would be interesting to investigate the relationships between companies and universities, technological institutes and other RIS agents in order to promote innovation in companies located in a given territory and thereby help to increase their quality, competitiveness and productivity.

One limitation of this study is the fact that the sample was structural in nature and therefore did not cover the whole complexity that may arise in the business environment of 'Shoe Valley'. However, as we mentioned earlier, when selecting the 41 companies we attempted to represent the wide range of possible situations. Another limitation concerns the analysis, since these results cannot be generalized. However, they do illustrate the trends in the behaviour of the companies in this territorial context. The information we present here has been obtained exclusively from the companies in our sample. It would be interesting and indeed necessary in future studies to gauge the opinion of the institutional agents of the RIS. This would provide information about how these agents view the development of the sector and their relationships with the companies within it. Finally, we believe that specific sectoral studies of other industries that collaborate with institutional agents are needed in order to determine whether the observations we have made in this study can be extended to other areas. This comparative element is essential in studies that relate companies to

their territory because it identifies the role played by institutional agents of the RIS in other sectors.

From the information obtained in this study we can make the following recommendations regarding the links between the various RIS agents:

- The procedures involved in acquiring RIS public innovation funds should be simplified. This requires setting up teams of technicians with members from companies and the agencies responsible for facilitating access to such funds.
- Relationships between companies and universities on innovation issues should be strengthened by establishing a medium-term action plan to enable the transfer of knowledge from the universities to the business fabric.
- The structure of RIS institutional agents should be simplified since the current perception among companies is that there are too many of them and that their competencies overlap.
- Companies should be advised to create stable in-house innovation structures that can plan innovation processes in the medium and long term. These structures could involve the participation of staff from technological institutes that provide support in the sector.
- The proper functioning of the Valencian Innovation System should be promoted. The autonomous government of the Valencian Community, companies, universities and other agents should combine their efforts and criteria so that the Community can indeed become «a learning region».

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