The Relation Between Firm’s Export Capacity And Innovation: The Galician Case

Abstract

The aim of this paper is to provide new evidence about the relation between the firms' innovative performance and their export activity. In this sense, this case study is based on the bi-directional hypothesis that innovation has a positive effect on the companies´ competitiveness (opening new markets; productivity increases; new products...); and that, similarly, the internationalization induces firms to a higher innovation commitment (competitive context). From a macroeconomic viewpoint, this process leads to an improvement of the trade balance as well as to higher economic growth. The research question and main goal of the paper is to analyse to what extent the innovation performance of firms affects their export activity; and likewise how their own internationalization pushes them to a higher innovation effort.

In addition, this paper takes into account some firms’ structural characteristics (in particular size and sector) and the lack of a single behavioural pattern. In order to carry out this study, survey data from a sample of 213 Galician firms are analysed. We use in this study a wide range of variables related both to the innovative performance and their export activity (measured by the share of the foreign markets over total sales). The conclusions suggest that there is enough evidence supporting the existence of a strong and positive relationship between the firms´ innovative performance and their export activity.

Keywords: innovation, export activity, firms, Galicia

Resumen

El objetivo de este trabajo es proporcionar nuevas evidencias sobre la relación entre el desempeño innovador de las empresas y su actividad exportadora. El estudio parte de la hipótesis bi-direccional de que la innovación influye positivamente en la competitividad de las empresas (apertura de nuevos mercados, aumentos de productividad, nuevos productos...), y que, a su vez, la internacionalización induce a las empresas a un mayor compromiso con la innovación (contexto competitivo). Desde una perspectiva macroeconómica, este proceso conduce a una mejora de la balanza comercial así como a un mayor crecimiento económico. La pregunta de investigación y principal objetivo del trabajo es analizar en qué medida el comportamiento innovador de las empresas influye en su actividad exportadora; y, del mismo modo, cómo su propia internacionalización las empuja a un mayor esfuerzo en innovación.

Además, se consideran otras características estructurales de las empresas (sobre todo tamaño y sector), que permiten entender mejor los diferentes comportamientos. Se analizan datos de una encuesta realizada a 213 empresas de Galicia y se utilizan diversas variables relacionadas con el desempeño innovador y la actividad exportadora (medida por la proporción de los mercados extranjeros sobre las ventas totales). Los resultados apoyan la existencia de una relación fuerte y positiva entre el desempeño innovador y la actividad exportadora.

Palabras clave: innovación, actividad exportadora, empresas, Galicia

1. Introduction

The aim of this paper is to provide new evidence about the relation between the firms' innovative performance and their export activity. In this sense, this case study is based on the bi-directional hypothesis that innovation has a positive effect on the companies´ competitiveness (opening new markets; productivity increases; new products...); and that, similarly, the internationalization induces firms to a higher innovation commitment (competitive context). From a macroeconomic viewpoint, this process leads to an improvement of the trade balance as well as to higher economic growth. The research question and main goal of the paper is to analyse to what extent the innovation performance of firms affects their export activity; and likewise how their own internationalization pushes them to a higher innovation effort.

In addition, this paper takes into account some firms' structural characteristics (in particular size and sector) and the lack of a single behavioural pattern. In order to carry out this study, survey data related to a sample of 213 firms from Galicia (Spain) are analysed. We use in this study a wide range of variables related both to the innovative performance and their export activity (measured by the share of the foreign markets over total sales).

The research method bases on the analytical comparison among a set of qualitative and quantitative variables related to the innovation and trade performance of firms. Moreover, these comparisons concern both the spatial distribution of turnover (market) and the type of innovation activity developed by firms.

2. Theoretical Framework

Last decades have witnessed a reconsideration of the theoretical framework of international trade in light of the advances that have taken place in the Economics of Technological Change. Indeed, a central issue of the empirical literature in this field has been the relationship between the trade patterns of different countries and their technological and innovative behaviour.

Some early studies, such as Soete (1987), Porter (1990) or Dosi, Pavitt and Soete (1990) are classic references in this topic. Many of these and subsequent studies draw on an aggregated perspective based on the existing relationship between both realities (innovation and internationalization) through macroeconomic analyses. Unlike this macroeconomic approach, others analyse this relationship in a more specific way, via particular case studies and from a microeconomic perspective. This microeconomic approach, based on the specific analysis of the business reality is producing countless studies that clearly show the huge complexity of this relationship.

The theory of resources and capacities provides an explanation of firms´ export behaviour. This theory, first started by Edith Penrose's seminal study (1959), and later expanded by Wenerfelt (1984), Barney (1986, 1991, 2001), Dierickx and Cool (1989) and Amit and Schoemaker (1993), considers a firm as a set of specific, imperfectly imitable productive resources that allow it to compete successfully with other firms. The studies following this

approach have developed a type of theory of the comparative advantage, as Barney (2001) underlines. According to this theory, the firm's capacity to generate sustainable comparative advantages depends on the possession of certain resources that should meet four conditions. The first condition is that these results should enable the firm to achieve strategies for improving its efficiency (they should be valuable). Secondly, these resources should be scarce (otherwise, any comparative advantage could be easily lost). Thirdly, they should be impossible to imitate, because of two factors: the difficulty to identify the reasons behind success or legal protection through patents and brands. Finally, these resources should be impossible to substitute. Therefore, according to this theory, the availability of resources with these characteristics gives firms a higher capacity to export.

In this analytical context, intangible resources are of vital importance. The reason is that such resources, based on information and knowledge meet the above-mentioned criteria more easily (value, scarcity, impossibility to imitate or substitute), and consequently they seem to be top candidates for sustaining firms´ comparative advantage (Itami, 1987). Despite the wide variety of intangible resources (human capital, technological capital, organisational capital…) higher importance is attributed to technological resources in order to account for firms´ competitive advantage. The reason is that these knowledge-intensive resources are yet more prone to meet the prerequisites. As the economics of technological change has emphasized on countless occasions, these resources have simultaneously a significant amount of tacit character that makes their codification extremely difficult, a certain kind of specificity that precludes their transfer in the market, as well as a high level of complexity together with their accumulative and path-dependent nature.

In many cases, these technological resources produce innovations, which are the result of a process leading to the improvement of the productive activity or the introduction of a new (differentiated) product into the market. In this sense, the combination of rising globalization, market segmentation and the emergence of more customized products pave the way for more competition through differentiation (López and García, 2004). Moreover, a higher technological capacity is at the same time an important incentive for firms to become more international and receive better returns on their technological efforts.

3. Hypothetical Remarks

This paper, among other studies, takes part in researching the influence of firms´ structural and organizational characteristics on their export activity. In this sense, although special attention is paid to the technological factor, other internal characteristics such as the firm's size and sector activity are also included.

The size of a firm is one of the structural characteristics that have received the most attention in this kind of studies. In general, larger firms have more resources and capacities than small firms (SMEs). In this sense, size becomes into a prerequisite for export activities (Eusebio, Andreu, Belbeze 2004). Nevertheless, diverse studies refer to a certain ambiguity. While some studies highlight the existence of linearity between a firm's size and its export capacity (Calof 1994, Alonso and Donoso 2000, among others), others disagree and underline that this relationship is not as obvious as it may seem (Wolf and Pett 2000, Verwaal and Donkers 2002, among others). In order to provide additional evidence that could clarify this question, we formulate the first hypothesis:

H1: A firm's export effort is positively correlated to its size; or in other words: the larger the company the greater its capacity to export.

Another interesting aspect is the fact that no all sectors show the same propensity to export. However, in view of the undergoing globalization, the changes it produces might be changing the scenario, and hence it may be useful to analyse the particularities of each sector from the standpoint of their export behaviour. This leads to the second hypothesis:

H2: Manufacturing firms have a higher propensity to export than service ones.

As we mentioned before, there is broad literature on the relationship between the export behaviour and the technological capacity of an enterprise. In this respect, Rodriguez (1999) finds a clear connection between the technological and the export activities of Spanish firms. Labeaga and Martínez-Ros (1994) discover evidence in favour of the reciprocal influence among employment decisions, propensity to export and innovative activities of a firm. Alternatively, Martin and Velázquez (1993) reach at the conclusion that the relationship between the intensity to export and R&D expenditure over sales is a U-inverted one. On the contrary, other studies suggest that the strategy for internationalization or diversification of markets positively affects the firms' innovation activity (Caves 1982, Kamien and Schwartz 1982, Hitt et al 1997). In order to clarify this question we formulate the following hypothesis:

H3: Firms´ exports are positively related to R&D activity; in other words: the larger R&D efforts, the larger export capacity.

Moreover, the analysis tries to deepen into firms´ innovation patterns (types of innovation and innovative activities) to determine the specificities of this complex relationship.

4. Empirical Results from Survey

Concerning the relationships hereby presented, a preliminary research into the main regularities observed from the survey is done. This study searches for empirical evidence in order to verify the above-mentioned hypotheses and, more specifically, the goal of the paper is about the relation between the innovation performance of firms and their export activity. As we said before, the main research question is to what extent, and how, the innovation activity of firms and the internationalization of sales are related.

The survey considers firms located in the Autonomous Region of Galicia (Spain) that are included in the ARDAN database (Partnership of the Vigo's Frank Zone). In particular, we analyse information about their innovative performance and export activity[1]. More precisely, the survey provides information from 213 firms, of which 181 (85%) have provided feedback on their market activity. This sample is divided into 12 sectors, of which 6 are industrial, 1 construction, and 5 services. The questions are referred to the period 2004-2005.

[1] It is important to clarify that the survey provided to the firms embraces a large number of questions not only related to the variables analyzed in this paper, but also to many other questions dealing with the operation of the Galician innovation system.

The first analytical issue deals with the supposed relationship between a firm's size and its export capacity. In this sense, the sample of firms is divided depending on the number of employees into four categories: micro-enterprise (less than 10 employees), small enterprise (between 10 and 49 employees), medium-sized enterprise (between 50 and 250 employees) and large-enterprise (more than 250 employees). Data show a positive clear-cut relationship between a firm's size and its participation on foreign markets. In this way, while the foreign markets absorb on average 13% of sales in the case of large enterprises, this figure is 8,8% in the case of medium-sized firms. Finally, this figure is reduced to 7,9% and 7,7% in the case of small- and micro- enterprises, respectively. Overall, the average is about 8,4 % of their turnover from abroad for all the surveyed firms, whereas 67% comes from the domestic (Galicia) market and about 25% from around Spain; which suggests low levels of sales internationalization (Table 1).

Table 1. Market distribution of turnover in relation to the size of firms

Size of the firm		Galician Market	Spanish Market (excluding Galicia)	International Market
Micro	N	40	40	40
	Average	81,3	10,8	7,7
Small	N	98	98	98
	Average	66,9	25,0	7,9
Medium	N	28	28	28
	Average	57,6	33,9	8,7
Large	N	15	15	15
	Average	45,4	41,9	12,7
Total	N	181	181	181
	Average	66,9	24,7	8,4

Source: Own elaboration from survey.

This result confirms to some extent those of previous studies, although some differences among small sizes are hardly noticed. In any case, it is true that micro-enterprises tend to be more oriented towards the Galician market (local and regional), which represents more than 80% of their total sales. In this way, the weight of the local and regional market brings to light the importance of firm's dimensions, where the former decreases as the size increases.

Another aspect of scientific interest is the relationship between the type of activity a firm executes and its export behaviour (Table 2). On one hand, the results clearly show a higher propensity to export in industrial activities, and even more in textile manufacturing (21,1% of sales abroad and 76% outside Galicia). Textile manufacturing is followed by food producers (16,2% on foreign markets and 60% outside Galicia) and, to a lesser extent, manufacturers of metal products, machinery and metallurgy (16% of their sales on international markets). Other industrial activities present much lower levels of internationalization, maybe due to the particular nature of their products. It is the case for example of firms extracting and transforming non-metallic minerals, together with energy producers and distributors, which appear to dominate the domestic market.

On the other hand, service enterprises show a very low propensity to export in comparison to the industries above-mentioned just with the exception of wholesales and transportation (11,5% of their sales abroad). Really, given the sample, this is the only services branch that exceeds the average internationalization rate, which is 8,4%. Actually, this observation seems to be coherent with the concept that has dominated economic literature about services´ non-tradable character, which is determined by its specific characteristics such as intangible goods

and the simultaneity of their production and consumption. In fact, other recent studies based on different samples of firms (PITEC[2]) have reached similar results (Vence et al 2007).

In this way, the permanence of a traditional gap in the propensity to export in favour of industrial enterprises is observed, in a context facing the increasing internationalization of certain knowledge-intensive service activities (firm-related services, engineering, consultancy, education…). Such a result can be explained by the still relatively scarce presence of this type of tertiary activities in the area under research, characterized by the predominance of more established and traditional activities. In this sense, other studies (Rodil 1998, Vence and Rodil 2002) have shown the reduced technological intensity typical of the Galician foreign trade, which reflects the composition of its productive structure.

Table 2. Market distribution of turnover with respect to the branch of activity

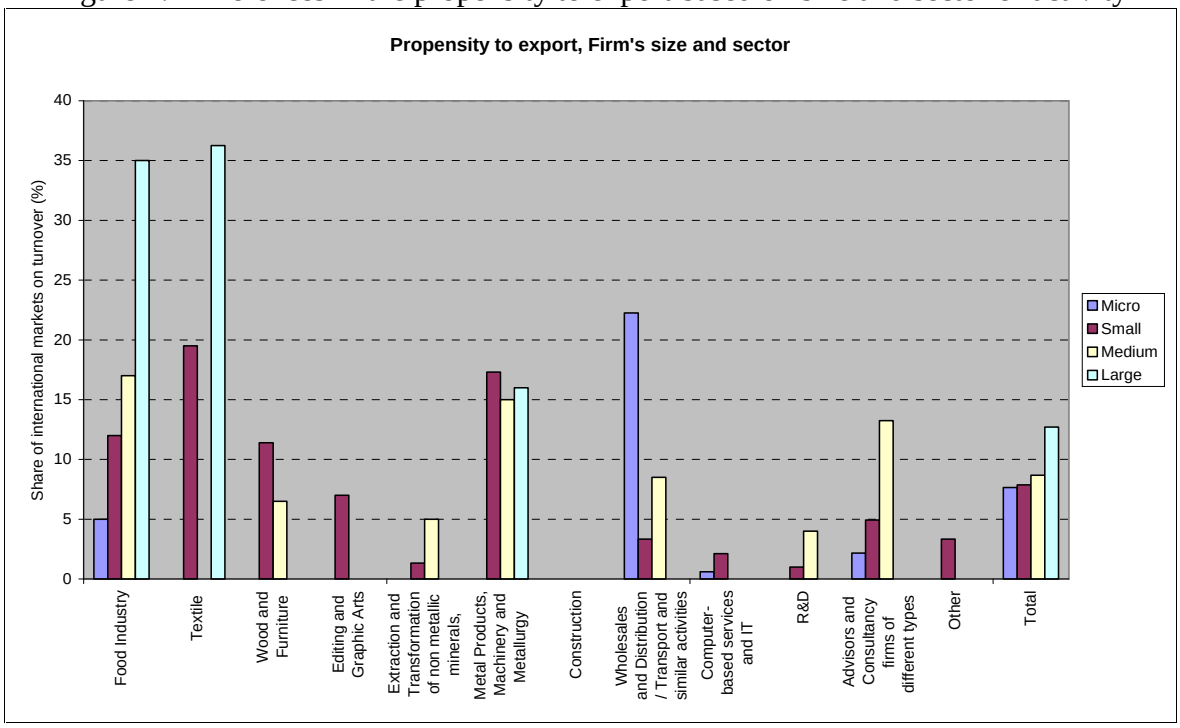
Branch of Activity		Galician Market	Spanish Market (excluding Galicia)	International Market
Food Industry	N	14	14	14
	Average	40,5	43,7	16,2
Textile	N	9	9	9
	Average	23,7	55,3	21,1
Wood and Furniture	N	8	8	8
	Average	52,4	38,9	8,8
Editing and Graphic Arts	N	6	6	6
	Average	78,0	14,2	7,0
Extraction and Transformation of non metallic minerals, Production and distribution of Energy	N	7	7	7
	Average	82,4	16,3	1,3
Metal Products, Machinery and Metallurgy	N	22	22	22
	Average	53,0	31,3	15,8
Construction	N	13	13	13
	Average	71,6	28,4	0,0
Retail (including automobiles) and Catering	N	17	17	17
	Average	87,7	6,4	5,9
Wholesales and Distribution / Transport and similar activities	N	29	29	29
	Average	61,6	26,5	11,5
Computer-based services and IT	N	15	15	15
	Average	78,4	20,3	1,2
R&D	N	4	4	4
	Average	63,8	33,0	3,2
Advisors and Consultancy firms of different types	N	33	33	33
	Average	82,5	12,7	4,6
Other	N	4	4	4
	Average	83,8	13,8	2,5
Total	N	181	181	181
	Average	66,9	24,7	8,4

Source: Own elaboration from survey.

The mix of the previously mentioned criteria allows us to confirm in general terms, the observed empirical regularities. In this way, a similar pattern is observed in most of the sectors. This suggests the existence of a certain level of influence from the firm's size and sector on its export behaviour (Figure 1).

[2] The Technological Innovation Panel (PITEC) is a statistical instrument for monitoring the innovative activities of Spanish firms. It is the result of the joint effort of the National Statistics Institute (INE), the Spanish Foundation of Science and Technology (FECYT) and the Cotec Foundation.

Figure 1. Differences in the propensity to export based on size and sector of activity



Source: Own elaboration from survey.

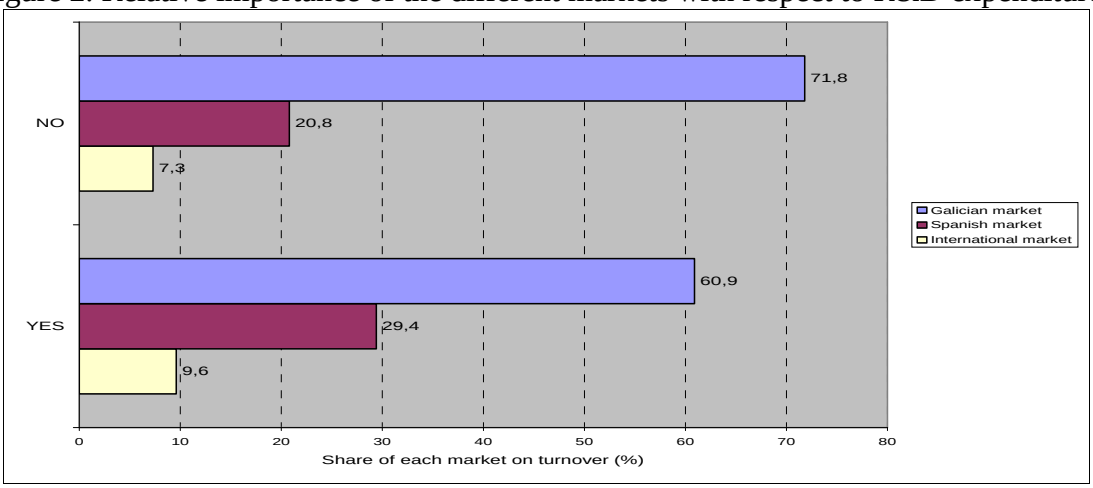
Having found out that firms´ propensity to export depends to some extent on both their size and sector; it should be asked to what way their behaviour, in terms of innovation, results into higher or lower levels of internationalization. This hypothesis derives from countless contributions (some of them already mentioned in the theoretical section) developed both from microeconomic and macroeconomic perspectives.

One of the most studied variables in the empirical literature on this research field is the amount of investment in R&D activities. The resources that a firm allocates for improving its technological and innovative capacities constitute an important factor for its market success. From the earlier discussion, we can conclude that R&D expenditure is a key condition for achieving technical progress, actively participating in the creation and diffusion of knowledge and converting it into a competitive advantage for the enterprise.

Considering this kind of investment as an analytical criterion, data show that out of the 181 firms (with available data on market turnover), 81 (44,8% of the sample) carry out R&D expenditure. Later, when their market activity is analysed, a higher propensity to export out of domestic market is observed. In fact, firms investing in R&D sell about 9,6% of their products on foreign markets, more than two points above than firms that do not it (7,3%).

Moreover, firms that invest in R&D tend to get about 30% of their turnover inside their own country (Spain), which implies 40% of participation on foreign markets (outside of the own region). On the contrary, firms without R&D expenditure are much more focused on the domestic market (regional/local), export only around 28% of their production to other markets, and very little abroad (Figure 2).

Figure 2. Relative importance of the different markets with respect to R&D expenditures



Source: Own elaboration from survey.

This result seems to be coherent with the hypothesis concerning the relationship between the innovative performance and the export capacity. In this sense, firms that invest resources to improve their technological capacity show a relatively greater export activity. In other words, firms with R&D activity depend less on the domestic market. In short, these firms seem to be more prepared to face globalization and more competitive environment. However, it is also possible that the own strategy for internationalization or diversification of markets makes firms pay more attention to innovation activities. Thus, this would have a positive effect on the R&D expenditure (Caves 1982, Kamien and Schwartz 1982, Hitt et al 1997).

If the innovative performance is analysed more precisely, we should bear in mind that it embraces many more aspects and not only R&D expenditure. The innovation activities include all actions since the beginning of the process until the product is launched into the market. In fact, the final target is the market and it is what gives meaning to innovation. Therefore, within this process there are diverse activities such as R&D investment (internal and external), acquisition of machinery, equipment and software, staff training and commercialization. Some of these activities may seem not to be so important for the success of an enterprise from an innovative viewpoint; however many times without them it is impossible to create a competitive advantage.

It should be highlighted that the distribution of firms can vary considerably according to innovation expenditure. In this sense, and considering all firms from the sample, the number of firms investing in innovation rises to 153 (71,8% of all)[3].

Table 3. Market distribution of turnover based on obtaining innovations

Possession of at least 1 type of innovation		Galician Market	Spanish Market (excluding Galicia)	International Market
NO	N	13	13	13
	Average	74,6	23,8	1,8
YES	N	136	136	136
	Average	66,9	24,1	9,0
Total	N	149	149	149
	Average	67,5	24,0	8,4

Source: Own elaboration from survey.

[3] This figure contrasts with the lower number of firms (94) that invest in R&D (44,1% of the sample).

Anyway, this criterion should be used very cautiously, as it considers a relatively high percentage of firms to be innovative. Therefore, some specificity of firms' innovative efforts should be detailed. With this aim, both the number of innovative activities and the kind of innovations are analysed below. These types of innovation can be classified into ten categories: (1) innovation in goods, (2) innovation in services, (3) methods of production, (4) logistic or distributional systems, (5) process-supportive activities, (6) systems of knowledge management, (7) organization of work, (8) changes in the relations with other firms or public institutions, (9) designing of a product; and (10) innovation in sales.

Considering this variety (10 innovation categories), a firm could be equally considered innovative if it carries out one or various types of innovation; thus different cases could be treated similarly. In order to consider this observation, firms were grouped according to the number of types of innovation developed by them (Table 4). As data show, most of the firms with innovative activity are grouped within the first five categories. Moreover, results show that more than 70% of innovative firms carry out from 1 to 5 types of innovation. From that point onward, the higher the number of categories, the lower the number of firms; a logical remark due to the greater requirements and efforts that are required to produce more innovation varieties.

Table 4. Market distribution of turnover with respect to the number of types of innovation

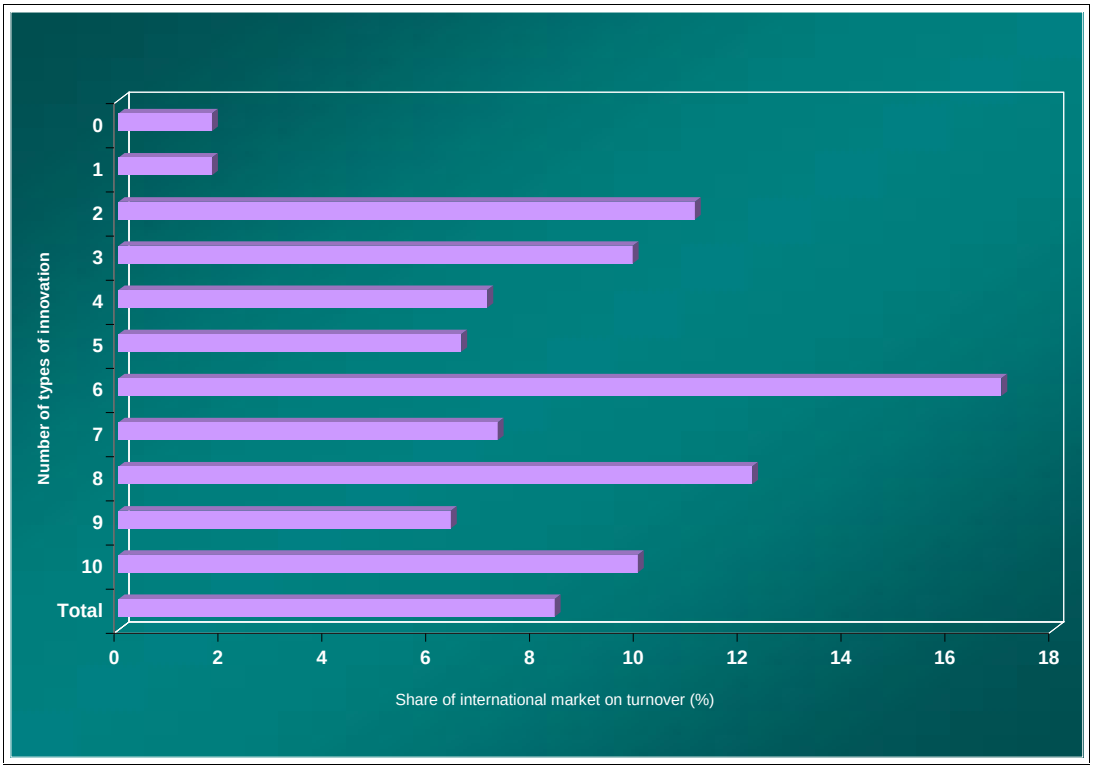
Total number of innovation types		Galician Market	Spanish Market (excluding Galicia)	International Market
0	N	13	13	13
	Average	74,6	23,8	1,8
1	N	12	12	12
	Average	79,5	18,7	1,8
2	N	25	25	25
	Average	72,5	16,4	11,1
3	N	16	16	16
	Average	75,9	14,0	9,9
4	N	24	24	24
	Average	60,5	32,4	7,1
5	N	17	17	17
	Average	71,6	21,2	6,6
6	N	14	14	14
	Average	53,1	29,9	17,0
7	N	11	11	11
	Average	70,5	21,8	7,3
8	N	9	9	9
	Average	50,4	37,9	12,2
9	N	7	7	7
	Average	64,3	29,3	6,4
10	N	1	1	1
	Average	20,0	70,0	10,0
Total	N	149	149	149
	Average	67,5	24,0	8,4

Source: Own elaboration from survey.

On the other hand, when the relationship between the innovation variety and the rate of internationalization is analysed, data show strong differences between firms that produce less than two types of innovation and those that produce two or more types of innovation. In this

sense, while the former group show a weak export activity, the firms of the second one (firms with 2 or more types of innovation) show higher rates of internationalization (Figure 3).

Figure 3. Rate of internationalization with regard to the number of types of innovation

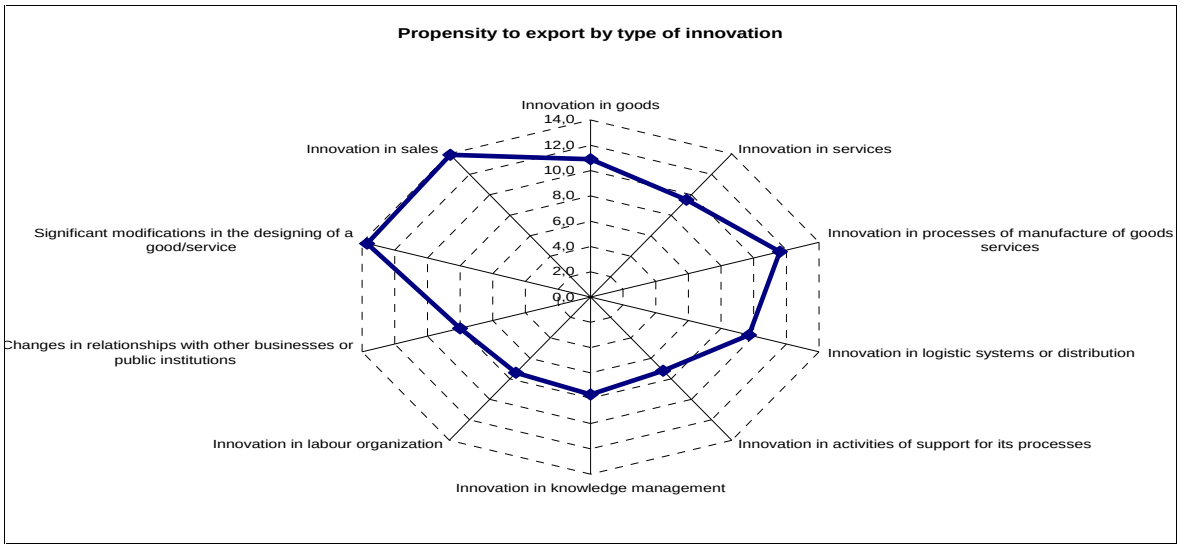


Source: Own elaboration from survey.

These results show the importance of innovative behaviour on exports, in line with other studies based on different geographical areas (Rodriguez 1999; Labeaga and Martínez-Ros 1994; Martín and Velázquez 1993; among others). In short, this positive impact contributes to the creation of competitive advantages, which can be used by the companies in order to increase their presence on international markets.

An additional step refers to what extent the different types of innovation can influence on the rate of firms' internationalization. In order to verify this, each type of innovation was separately analysed. In this sense, it should be underlined a higher relevance of innovations related to the introduction of new products into the market (innovation in sales, in product designing) as well as improvements in logistic and distributional systems. In fact, some of these kinds of innovation correspond to the highest levels of internationalization (Figure 4).

Figure 4. Propensity to export by type of innovation



Source: Own elaboration from survey.

Moreover, there is a significant gap between firms that innovate in particular fields and those that do not it. These are the cases of product innovation (goods and services), innovation in productive methods, as well as innovation in product designing and innovation in sales (Table 5).

Table 5. Propensity to export by type of innovation

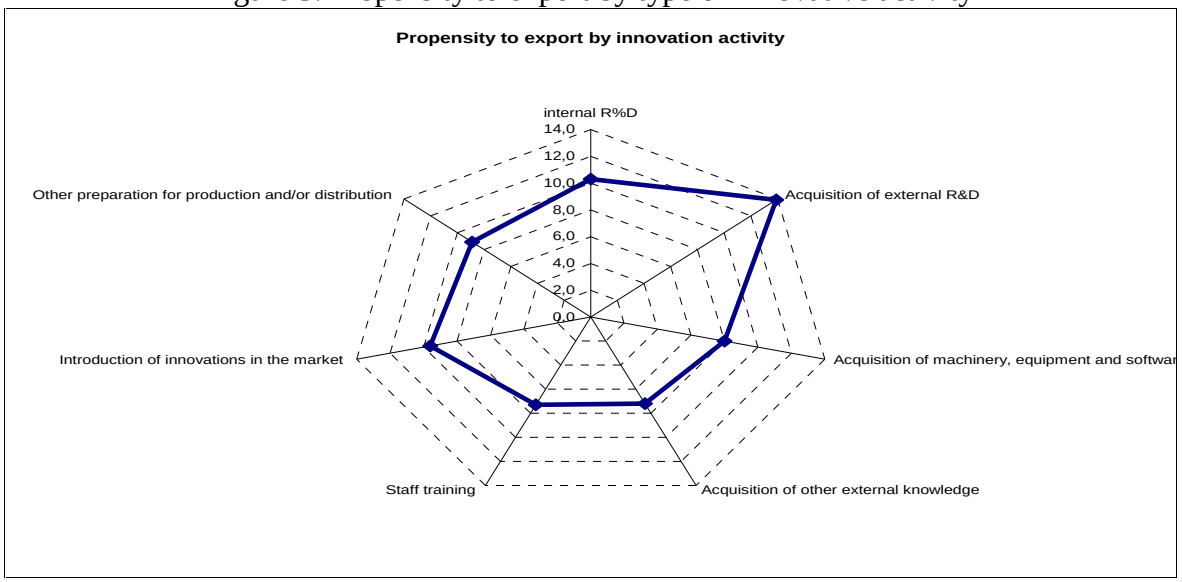
Type of innovation	Achieved?	Number	Average (%)
Innovation in goods	NO	61	6,5
	YES	77	10,9
Innovation in services	NO	56	6,8
	YES	77	9,5
Innovation in processes of manufacture of goods or services	NO	70	5,3
	YES	68	11,6
Innovation in logistic systems or distribution	NO	93	8,0
	YES	44	9,7
Innovation in activities of support for its processes	NO	62	9,2
	YES	78	7,2
Innovation in knowledge management	NO	64	9,6
	YES	75	7,7
Innovation in labour organization	NO	70	9,4
	YES	67	7,4
Changes in relationships with other businesses or public institutions	NO	88	8,4
	YES	48	8,0
Significant modifications in the designing of a good/service	NO	103	6,4
	YES	35	13,7
Innovation in sales	NO	108	7,4
	YES	28	13,9

Source: Own elaboration from survey.

Another interesting issue is how each kind of innovative activity influences on the export activity. In order to analyse it these activities are grouped into the following seven categories: (1) internal R&D, (2) acquisition of external R&D, (3) acquisition of machinery, equipment

and software, (4) acquisition of other external knowledge, (5) training of personnel, (6) introduction of innovations in the market, (7) other preparation for production and/or distribution. In this sense, data show a higher propensity to export; particularly concerning the firms that develop activities of external R&D acquisition (about 14% of their sales go to foreign markets). These group of firms are followed by others that execute internal R&D (10,3% of sales become international), and those firms that introduce innovations in the market (9,6% of sales abroad). The third position is for firms that have carried out other preparation for production and/or distribution (8,9%). Unlike the above, results are not as clear with regard to other activities, such as staff training, acquisition of other external knowledge and the acquisition of machinery, equipment and software (Figure 5).

Figure 5. Propensity to export by type of innovative activity



Source: Own elaboration from survey.

Comparatively, Table 6 shows the obtained results for firms that execute such kinds of activities and those that do not them. In brief, we can conclude that firms that conduct innovation tend to show higher exportation rates.

Table 6. Propensity to export by type of innovative activity

Type of innovative activity	Achieved?	Nº cases	Average (%)
Internal R&D	NO	82	7,1
	YES	76	10,3
Acquisition of external R&D	NO	112	6,5
	YES	45	13,9
Acquisition of machinery, equipment and software	NO	52	9,7
	YES	103	8,0
Acquisition of other external knowledge	NO	119	9,1
	YES	33	7,2
Staff training	NO	62	11,0
	YES	89	7,3
Introduction of innovations in the market	NO	83	8,6
	YES	67	9,6
Other preparation for production and/or distribution	NO	92	7,7
	YES	51	8,9

Source: Own elaboration from survey.

5. Conclusions

In order to summarize the survey and research developed, we highlight some of the main results of the paper. Concerning the research question and main goal of the paper, the results show evidence supporting the existence of a clear and positive relationship between the firms´ innovative performance and their export activity.

More specifically, some aspects considered of interest in this paper are, firstly, that a firm's innovation intensity, measured approximately by the number of different types of innovations carried out (reaching a total of ten different types), turns out decisive when it comes to obtaining a better export conduct. In fact, results show how firms that hardly ever participate in innovative activities (one or none) are not present on foreign markets, while those that execute two or more types of innovation show a relatively higher propensity to export.

Secondly, some innovation methods that are closely connected with the firms´ export capacity are identified, highlighting in particular those activities linked with product design, sales methods, and improvements of logistic systems.

Thirdly, the types of innovation activities that are strongly related with a higher rate of internationalization of firms´ sales are identified. In this sense, together with R&D activities (internal and external), we also find important the activities related to the introduction of innovations into the market.

Furthermore, data show that firms´ propensity to export is positively correlated with their size, which is coherent with the conclusions of other studies (Calof 1994, Alonso and Donoso 2000, Eusebio, Andreu, Belbeze 2004).

In addition, the existence of a differentiated behavioural pattern dependent on the branch of activity where the firm operates is confirmed. In this way, greater rates of exportation are observed for firms involved in industrial activities (with few exceptions). This contrasts with the reduced rate of internationalization that service firms show. The above-mentioned statement seems to be coherent with the traditional explanation of services as non-tradable goods due to their specific characteristics, such as intangibility and relative simultaneity of their production and consumption.

In the case of the firms analysed here, what stands out the most is the low propensity to export of the knowledge-intensive service businesses (R&D, computer services), which are responsible for the expansion of services worldwide. This fact reveals not only some of the structural deficiencies that characterize the Galician economy and that are present in the predominant tertiary activities (traditional and low knowledge intensive activities). It also shows the inadequate capacities of the knowledge-intensive firms of which one may expect higher export levels. With regard to this, other studies (Rodil 1998, Vence and Rodil 2002) have underlined the reduced technological intensity of the Galician foreign trade, which reflects its specific production structure.

To conclude, it should be mentioned that regardless of other explanatory factors (size, activity…), there is enough evidence supporting the existence of a clear and positive correlation between firms´ innovative behaviour and their export activity (measured by the relative importance of the foreign markets over firms´ total sales). However, this should not mean that this relationship is easy and linear, but rather that it is extremely complex and subject to multiple particularities.

6. References

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