

The influence of Local Export Externalities and Firm International Experience on Export Performance

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Abstract—This research tries to analyze the role that knowledge about foreign markets has in increasing firms' exports in clustered spaces. We consider two interrelated sources of knowledge: firms' direct experience and indirect experience from other clustered firms – export externalities. In particular, it is proposed that firms would improve their export performance by accessing to export externalities if they have some previous direct experience that allows them to identify, understand and exploit them. Also, we propose that this positive influence of previous direct experience on export externalities keeps only up to a point, where it becomes negative, creating an inverted “U” shape. Empirical evidence gathered among wine producers located in La Rioja tends to confirm that firms enjoy of export externalities if they have export experience along several years and countries increase their export performance. While this relationship becomes less relevant as they develop a higher experience, we could not confirm the existence of a curvilinear relationship in their influence on export externalities and export performance.

Keywords—Clusters, curvilinear relationship, absorptive capacity

I. INTRODUCTION

THE involvement of firms in export processes to transfer their goods and services across national boundaries has been broadly considered as a means to improve firms' competitiveness and favour regional development (Delgado *et al.* [1]). In this sense, international presence requires of specific knowledge about how to conduct a business in foreign markets that allow firms to overcome obstacles associated with cultural, institutional and business distances (Eriksson and Chetty [2]; Henisz and Macher [3]).

The lack of foreign market knowledge has been extensively considered as a limitation for becoming exporters and expanding firms' international activities. While part of this knowledge could be acquired through standardized methods such as market research, the most important knowledge for exporting is based on experience (Johanson and Vahlne [4]). This experiential knowledge can hardly be transmitted among firms, it is learned by personal experience and it has a tacit nature. Because of this, exporting has been considered a learning process that allows firms to obtain direct experience from international markets useful for subsequent international activities (Majocchi *et al.* [5]). Nevertheless, along with direct experience, firms can also obtain knowledge about foreign markets indirectly, by the experience of others (Forsgren [6]; Henisz and Macher [3]). In particular, clusters around a geographical space may allow exporting firms to learn by the experience of their neighbouring firms that are also exporters -export externalities.

Clusters can be considered as a spatial concentration of firms and institutions that share goals, norms and beliefs that favour a local learning process (Dei Ottati [7]; Maskell [8]). As a consequence, clustered firms would find it easier to learn from proximate firms and improve their export performance (Clerides *et al.* [9]). The aim of this research is to understand the role that knowledge about international markets has in increasing firms' export performance in clustered spaces. We take into account these two sources of knowledge: direct experience and indirect experience from other clustered firms, but considering mutual influence between them. In particular, we establish that firms with previous direct experience in international markets have a higher capacity to benefit from the knowledge available in the cluster. Nevertheless, we also consider the possibility that, as firms increase their direct international experience, the positive effect of local knowledge on export performance is attenuated, even becoming negative. Previous research has analyzed the role of clusters under an increasing process of firms' internationalization, while evidence is not concluding (Belso-Martinez [10]; Clerides *et al.* [9]; Bernard and Jensen [11]; Greenaway and Kneller [12]). Many studies appreciate the positive influence of clusters in transmitting knowledge and increasing firms' international presence and their export performance (Belso-Martinez [10]; Greenaway and Kneller [12]). Nevertheless, it is also recognized that as firms increase their international presence they might reduce their local dependence and interaction by establishing networks with distant firms and institutions (De Martino *et al.* [13]; Keeble and Wilkinson [14]). In this research we try to contribute to these seemingly contradictory approaches by evaluating the mutual influence of local export externalities and firm international experience on export performance. In particular, we evaluate the relationship among them under the assumption that clustered firms differ in both their contributions to create knowledge externalities and their capacity to benefit from them (Shaver and Flyer [15]). First, we consider that firms that contribute most to improve firms' international presence are those that have previous international experience and not all clustered firms (Greenaway and Kneller [12]). Secondly, we assume that firms differ in the benefits to be obtained from the cluster by both their different capacity to recognize, assimilate and exploit it –absorptive capacity (Autio *et al.*, [16]; Zahra and George[17]) and their interest in keeping local relations rather than distant ones (De Martino *et al.* [13]; Morrison and Rabellotti [18]).

Also, we contribute to existing literature by integrating international business studies into a cluster approach. International studies have paid reduced attention to the benefits of clusters and little research has been undertaken that explicitly consider agglomeration effects on international activities (Shaver and Flyer [15]; Gupta and Subramanian, 2008).

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In spite of that, they have developed abundant research about the effect of knowledge experience from both the own firm and others' exporting firms, that can enrich cluster studies (Forsgren [6]; Sapienza *et al.* [20]). Interestingly, they emphasise the role of firm's absorptive capacity in integrating external knowledge from distant markets (Autio *et al.* [16]; Eriksson and Chetty [2]) while also find it difficult for international firms to maintaining local networks (Shaver *et al.* [21]; Henisz and Macher [3]).

Empirical evidence has been gathered on the exporting Spanish wineries, mainly small and medium enterprises (SMEs) located in a zone called "La Rioja", in the north west of Spain. In this sense, we follow previous research that has evaluated the role of knowledge spillovers on wineries (Porter [22]; Giuliani and Bell [23]; Morrison and Rabelotti [18]).

This paper is structured into the following sections: after this introduction, the theoretical background is presented in the second section and hypotheses for the study are proposed in the third section. The fourth section explains the sample used and the measurement of the variables. The fifth section summarizes the main results and discussions, before the conclusions are finally presented.

II. CLUSTERS, EXPORT EXTERNALITIES AND THE INTERNATIONALIZATION OF THE FIRM

It has been broadly considered that the lack of knowledge about foreign markets is a major obstacle to international operations and exporting activities (Johanson and Vahlne [4]; Shaver *et al.* [21]; Forsgren [6]). If firms are not familiar with regional rules, business relations or local tastes and preferences, they would perceive a high risk associated with exporting and they would be reluctant to increase their international presence (Sapienza *et al.* [20]). Part of this lack of knowledge can be easily obtained by market research, country reports or any other method of collecting information. Nevertheless, most of the relevant knowledge is tacit and difficult to be transmitted among firms (Eriksson *et al.* [24]; Henisz and Macher [3]). The traditional solution for this lack of knowledge is the development of direct experience about international markets. Because of the tacit character of market knowledge, it is assumed that transferring it from others is hardly possible and the main source is inevitably each firm's own operations (Johanson and Vahlne, [4]; Forsgren [6]). In this sense, export activities are considered as a learning process that allows firms to accumulate knowledge about distant markets while also develop internal routines and procedures dedicated to the servicing of international markets (Eriksson and Chetty [2]; Majocchi and Zucchella [25]).

Nevertheless, firms that are located in a cluster could also gain access to knowledge of other exporting firms located in the neighbourhood (Greenaway and Kneller [12]). Along with developing a direct experience, clustered firms can learn about distant markets indirectly, without having to go through exactly the same experiences as their proximate exporting firms (Levitt and March [26]; Eriksson *et al.* [24]; Shaver *et al.* [21]). Inside a cluster there is a physical, social and cognitive proximity among firms that favour the transfer of knowledge and prompts learning about distant markets –

export externalities (Clerides *et al.* [9]; Bernard and Jensen [11]; Greenaway and Kneller [12]). The access to this knowledge is limited to proximate firms (Almeida and Kogut [27]) as it is not easily accessible to outsiders (Storper [28]).

These knowledge spillovers or export externalities occur through different mechanisms. Physical proximity allows for face-to-face contact as a result of formal and informal interactions among employees, providers, clients and managers from different firms. They can establish relationships, providing each other with personal contact and technical advice as well as gossip and rumours, observation and the chance to imitate each others' activities (Henry and Pinch [29]). Also, highly mobile professional labour pool would lead to a high level of knowledge exchange among managers and an awareness of the resources of local competitors (Boari, Odorici, and Zamarian [30]). Finally, firms can establish stable relationships with local institutions that collect and transmit knowledge and experiences among firms that have complementary interests and similar problems (McEvily and Zaheer [31]).

But clusters are not only geographically proximate groups of firms; they are characterized by the presence of a community of people. As Capello points out ([32]), clusters become real "territories" when considering both a geographical proximity but also a cognitive proximity, defined it by their shared behavioural codes, common culture, mutual trust and sense of belonging. Clustered firms share a complex social and cultural identity based on collective beliefs, conventions and history that facilitates communication and creates a set of dominant workplace practices (Maskell [8]).

Moreover, clustered exporting firms tend to resemble each other (Koenig [33]). Following Porter [34], greater competition occurs because competitors in close proximity often focus on each other to a greater extent than firms at a distance. Organizational studies on rivalry have pointed out that firms can only identify and pay attention to a limited number of rivals, and are those proximate ones that are more similar to the firm (Levitt and March [26]). In this sense, the ease of social interaction and observation afforded by proximity make easier to scrutiny rivals that are undertaking similar strategies or that share similar characteristics (Baum and Mezias, [35]). Also, proximate firms tend to follow similar local practices or rules established by institutional pressures (Enright [36]). Most regional exporters tend to belong to the same trade associations, obtain information from the same technological institutions or hire employees and managers from the same training centres. These institutions introduce norms of acceptable conduct, transmit similar technical training, and establish behaviour conditions for firms to remain linked that makes them homogeneous (Benjamin and Podolny [37]).

It is precisely exporting firms' physical and cognitive proximity along with their local similarity which favour the learning process among clustered exporting firms. Since knowledge transfer occurs in a shared social context in which different firms are linked to one another, clusters facilitate communication while also improve mutual understanding among firms (Dei Ottati [7]).

The ability of distant firms to learn from others is conditioned by their social context and culture, and the portfolio of activities, technologies and markets that they have been undertaking (Teece *et al.* [38]). Inside a cluster firms develop complex routines consequence of their shared experiences and beliefs, while also embark on similar market and product that allow them to share and understand others' tacit knowledge easily (Grant [39]). That is, firms develop informal rules, habits, or "untraded interdependencies" (Storper [28]) that foster shared patterns and behaviours where knowledge can flow from a firm to others.

III. THE MODERATING INFLUENCE OF DIRECT EXPERIENCE ON EXPORT PERFORMANCE

A. A positive effect of firm's direct experience

Following cluster studies, it is considered that there are export externalities associated to knowledge spillovers that can increase local exports. As clustered firms learn from their proximate exporters they can intensify their sales abroad and improve their export performance (Clerides *et al.* [9]; Bernard and Jensen [11]; Greenaway and Kneller [12]). Nevertheless, not all firms can learn from others in the same way, as they differ in their abilities to understand and assimilate new knowledge gained from external sources (Cassiman and Veugelers [41]). Cohen and Levinthal [40] explained it as "absorptive capacity" defined as firms' ability to recognize the value of new external information and knowledge, assimilate it, and apply it for commercial ends. This absorptive capacity tends to develop cumulatively and builds on prior related knowledge. More precisely, new knowledge is incorporated into organizational knowledge only when it is shared and assimilated into organizational routines, documents, and practices (Cohen and Levinthal [40]).

This is mainly due to the way firms accumulate and articulate knowledge inside organization by a historical, unique and sometimes unconscious process of learning. Firms are conditioned by the specific investments and complementary assets that firms possess or possessed in the past, their social context and culture, and the portfolio of activities, technologies and markets that firms have been undertaking. All these conditions propel firms towards a specific learning path determined by previous and historical knowledge of the firm that is reflected in their specific routines and procedures (Teece *et al.* [38]; Zahra and George [17]). This learning process can be decomposed into two main elements: explorative learning and exploitative learning (Lichtenthaler [42]). Explorative learning refers to firms' capacity to identify, analyze, process, interpret and understand acquire external knowledge. Exploitative learning refers to applying the acquired knowledge and is related to firms' capacity to incorporate it in new goods, systems or processes (Zahra and George [17]). These two elements are interrelated and both are necessities for firms to improve their export performance.

In international business, firms' capacity to absorb knowledge gained from external sources has been broadly related with firms' direct international experience (Eriksson *et al.* [24]; Eriksson *et al.* [43]; Shaver *et al.*, [21]; Autio *et al.*

[16]; Eriksson and Chetty [2]; Hennisz and Macher [3]; Sapienza *et al.* [20]). The lack of experience makes firms with a limited understanding of the foreign business environment which can cause them misinterpret or misapply the knowledge they receive (Shaver *et al.* [21]). As firms begin to export they have to take on new knowledge, including experiential knowledge of foreign business practices, institutional norms and general experiential knowledge of how to organize for foreign competition (Eriksson *et al.* 1997). Thus, acquiring foreign experiential knowledge involves new ways of thinking, under an intense and repeated process to overcome the rigidities created by their previous knowledge (Autio *et al.* [16]).

On the contrary, firms with direct international experience have already made investments on assets, people and activities while also have developed the necessary routines and procedures for gathering, interpreting and exploiting others' international experiences (Eriksson and Chetty [2]). On the one hand, direct experience improves firms' explorative learning as they can more easily identify which local knowledge about distant markets is relevant for their existing activities. They have developed abilities to scan the environment, focus on others' mistakes and success, and incorporate them to make better informed decisions on their own international expansion (Sapienza *et al.* [20]). Also, firms that have previous experience can integrate this external knowledge in existing procedures and routines, reinforcing rather than changing existing firm knowledge stock (Autio *et al.*, [16]). On the other hand, firms that have direct experience can improve their exploitative learning as they can capture external knowledge to create new goods, systems and processes useful in foreign markets (Zahra and George [17]).

Considering that direct export experience increases firms' learning abilities, this experience can be obtained by both the depth experience in foreign markets and the diversity of these markets (Eriksson and Chetty [16]). If the firm has prior related knowledge developed within the context of one specific market it can have a depth of knowledge on how to integrate the knowledge of other clustered firms into their activities in this market. The more time the firm has spent in this market, the higher would be its ability to combine internal and external knowledge. Complementarily, the firm can have experience in several foreign countries, which implies that it has developed internal procedures and systems that promote learning from other cultures, providers or clients so it is more likely to integrate different sources of knowledge. In any case, as the firms have more international experience they adapt their organization to understanding and appropriating relevant knowledge about foreign markets locally available.

Based on the above reasoning we propose that,

Hypothesis 1. "Inside a cluster, firm direct international experience reinforces the effect of export externalities on export performance".

B. A decreasing return effect of firm's direct experience

Whereas firms learn about foreign markets from their own experience and the experience of proximate firms, these two knowledge sources do not affect with the same intensity to all firms. As it was presented in the prior hypothesis, firms

lacking of direct experience in international market have difficulties in understanding and exploiting others' knowledge. Nevertheless, firms that have already possessed broad international experience are also less likely to improve their export performance by accessing to the experience of others as a knowledge source (Shaver *et al.* [21]; Henisz and Macher [3]). Instead of local relationships, firms with high international experience can learn the institutional, technological, and competitive environments of foreign markets from their direct experience, through both the depth and diversity of their exports. Moreover, they can establish relationships with distant agents that can be also a source of knowledge useful to improve their performance (Belso-Martinez [10]; De Martino, *et al.* [13]). International business research assumes that local linkages with other exporters not only increase firms' knowledge about distant markets but also reduces the perceived risk associated with their internationalization. When firms lack of direct experience they face a great uncertainty and risk associated with exporting so they tend to play a great attention to other local firms that are also exporters. Firms with little experience consider their proximate rivals as their main references and they try to resemble them as much as possible in their international decisions (Barkema *et al.* [44]; Henisz and Delios [45]). In this sense, the shared social and cultural identity of clustered firms would favour the establishment of these dominant workplace practices (Maskell [8]). On the contrary, firms with abundant international experience do not depend on local competitors' knowledge and perspective to expand internationally, so establishing relationships with local exporters does not contribute to improve their performance, being even possible that they would reduce performance (Barkema *et al.*, [44]). On the one hand, clustered firms with abundant international experience can reduce their export performance by a knowledge leakage that can benefit proximate international rivals. Instead of benefiting from the local export externalities, firms with abundant experience can be considered as their main contributors, so they tend to isolate themselves in order to internally appropriate their experience in foreign markets (Shaver and Flyer, 2000; Henisz and Macher, 2004). On the other hand, firms with abundant experience in foreign markets can reduce the benefits of local export externalities because these externalities require of local interactions that may restrict firms' ability to establish linkages outside the cluster, with competitors, institutions, providers or clients in other markets. There is a common agreement that clusters should be open to outside forces and interact with others in order to avoid a 'lock-in' effect that reduce their ability to adapt to new environments (McEvily and Zaheer [31] Boschma [46]; Molina-Morales and Martínez-Fernández [47]). Firms that rely only on local networks reduce their attention to external information relevant for the firm while also tend to perceive and interpret the phenomena in a same way (Grabher [48]). Rather than investing to create new relationship with distant agents, exporters embedded in local interactions spend time and efforts in cultivating relationships that are more governed by social norms and local rules than by technical and rational criteria (Henisz and Delios [45]).

External relations allow international firms to access to a great variety of experiences and other sources of knowledge that induce firms to learn new ways of doing things. For instance, firms can rely on distant providers to obtain technological advice, develop relationships with distant distributors and clients that can give useful advice about product design or marketing, or establishing relationships with distant institutions that might help to increase their international sales (De Martino *et al.* [13]). Empirical evidence has tended to confirm that firms improve their export performance by avoiding local relationships (Morrison and Rabellotti [18]) and developing networks with distant agents (Belso-Martinez [10]; Hendry *et al.*, [49]).

The inconvenience of a high local embeddedness may be counterbalanced by gains associated with better understanding and assimilating external knowledge in firms with little export experience. Nevertheless, this has not been the case when firms have already developed broad exporting experience. We therefore expect that the positive effect of firms' direct experience on the benefits from local export externalities will be diminishing. While direct experience and other experience have a positive mutual influence, beyond a certain point, additional increase in firms international experience become detrimental for them. We therefore propose a curvilinear relationship, an inverted "U", between firm direct export experience and the benefits of export externalities. This relationship proposed has certain parallelism with other curvilinear relationships established between shared experiences or local exchanges and different measures of performance –innovation, knowledge created, firm survival (Molina-Morales and Martínez-Fernández [47]).

Hypothesis 2. "Inside a cluster, the moderating effect of firm direct international experience on the relationship between export externalities and export performance is U-shaped".

IV. METHODOLOGY

A. Sample collection

The main sources used to obtain the list of wineries in the objective population were the directories drawn up by the Regulatory Council of the Rioja Designation of Origin. In total, the population considered came up to 211 wineries, from which 177 valid questionnaires were obtained, which represents a response rate of over 83 percent. There are 138 exporting firms and 39 non-exporting firms. Although the survey was returned by 138 exporting wineries, only 135 provided complete information.

B. Measurement of variables

The dependent variable is *export performance*, defined as the outcomes from the firm's international activities. In particular, we measure the ratio of export sales to total sales (export sales ratio) for each firm. This export performance is by far the most common export performance measure in empirical research (Katsikeas *et al.*, [50]; Chevassus-Lozza and Galliano [51]; Bernard and Jensen [11]; Malmberg *et al.* [52]).

This variable is associated with the international success of the company, as firms in international markets are subject to significant competitive pressure while also having to recover high sunk costs (Malmberg *et al.* [52]). As long as the firm is able to increase foreign sales, it is showing that it is capable of successfully competing in international markets. There is a great deal of empirical evidence confirming a positive relationship between exports and a firm's productivity (Delgado *et al.* [1]), and is broadly associated with competitive performance (O'Farrell *et al.* [53]). In addition, previous research has already demonstrated the existence of a strong association between export intensity and other export-performance measures (Lages and Lages [54])

With respect to the independent variable *direct international experience*, many prior studies have been quite consistent in its usage of number of years exporting as a measure of international experience for SMEs (Stoian *et al.* [55]). This measure is based on the argument that exporting to other markets on a regular basis over time increases general knowledge about how to do business abroad (Eriksson *et al.* [24]). However, this measure ignores the knowledge about how to manage a variety of situations, operations, and market conditions in different countries, which has important implications for export performance (Eriksson *et al.* [43]; Zahra and George [17]). In fact, (Luo and Peng [56]) and (Brouthers and Nakos [57]) argue that both time abroad and foreign markets served can lead to gains in international business know-how. We therefore estimate the model with two alternative measures of international experience: i) *Years exporting*, measure as the number of years involved in exporting to capture time-driven international experience and ii) *Countries exporting*, measured as number of foreign markets served to capture diversity-driven international experience.

To estimate the *export externalities* derived from the geographical agglomeration of exporting firms we measure the density of other exporting wineries located in the same geographical area. This measure has been broadly used in the literature (Malmberg *et al.* [52]; Clerides *et al.*, [9]; Bernard and Jensen [11]; Greenaway and Kneller [12]) under the assumption that proximity is necessary to transfer knowledge (P. Almeida and Kogut 1999). In particular, the number of exporting DOC Rioja wine producers within the same municipality were counted. A municipality is the smallest administrative division in the political organization of Spanish territory. The DOC Rioja wine producers are in nearly 150 municipalities, subdivided in three zones: Rioja Alavesa, Rioja Alta and Rioja Baja. Since they show great variety in terms of area, from 2.44 sq. km (e.g., municipality of Briñas) to 194 sq. km (e.g., municipality of Alfaro), the number of establishments in each municipality is divided by its corresponding area.

C. Control Variables

Along with the variables included in the model, we have included several variables that can affect export performance. *Linkages with local institutions* have been frequently associated with export performance (Keeble and Wilkinson [14]). Linkages with local institutions were measured using a dummy variable to indicate if the firm has relations with

different institutions located in the cluster. In particular, managers were asked if they have relations with linkages with research centers (e.g., The Institute for Vine and Wine Sciences) and universities. Secondly, *R&D investment* plays a critical role in increasing exports by either reducing production costs or increasing product differentiation. It is tightly connected with firms' capacity to introduce innovations, allowing the firm to achieve greater capability to meet the demands of their international markets and leveraging their costs across markets (López Rodríguez and García Rodríguez 2005; Tseng *et al.* 2007). In this research we controlled for the effect of the R&D as measured by research and development expenditures in comparison to sales. Thirdly, *advertising* can be a source of competitive advantage by identifying, evaluating and seizing external market opportunities. This variable is measure as the ratio of marketing-related expenses to total sales (Erramilli *et al.*, 1997; Tseng *et al.* 2007). We also controlled for the effect of *firm size*, although the expected effect on export performance is not clearly stated. Firm size is measured through a logarithmic transformation of the number of total employees (Chiao *et al.*, 2006). Finally, we have also considered *firm age* as a control variable of the model with also ambiguous effect on export performance. In this research we used the logarithmic transformation of the number of years that a company has in the wine-making activity as a proxy for age (Majocchi *et al.*, 2005).

V. RESULTS AND DISCUSSION

A. Analysis

The dependent variable in the regression model is censored, since it is the percentage of sales in international markets, and by definition ranges between 0 and 100. Accordingly, a Tobit analysis is used (Greene [62]). In order to minimize the problem of multicollinearity we mean-centered the independent variables that have interactions -export externalities and direct international experience measured by years exporting and countries exporting. We tested the two hypotheses using a set of 7 regressions. All models were significant and each had reasonable explanatory power, as can be seen in table 2.

We perform two sets of regressions, one using "years exporting" as a measure of direct international experience (models 2-4) and other using "countries exporting" (models 5-7). Model 1 is the baseline model which only includes the 5 control variables. Hypothesis 1 relates to the interaction effect of direct international experience and export externalities. Model 3 for years exporting and model 6 for countries exporting present the regressions for this hypothesis.

We find a positive and significant value for the coefficient in both models, so we could confirm hypothesis 1.

C. Discussion

Overall, we have found that both direct international experience and others' experience have complementary effects in clusters, so their mutual interaction increases firms' export performance. Results tend to indicate that the more experience has developed the firm in international markets,

the higher the effect of local export externalities on performance, as hypothesis 1 proposed. Underlying this hypothesis it was the assumption that knowledge spillovers from other exporters located physically proximate, or export externalities, had no effect on export performance. In this sense, the relationship between export externalities and export performance has been broadly analyzed in previous empirical studies with no concluding results. While some previous studies have found a positive effect (Chevassus-Lozza and Galliano [51]; Greenaway and Kneller [12]); others have found no significant effect (Bernard and Jensen [11], or even a negative one (Bernard and Jensen [11]).

In this research, we confirm that export externalities improve firms' export performance only in those firms that have direct international experience, as international experience in previous years and different countries increase firms' absorptive capacity. Previous studies have also confirmed this point: Eriksson and Chetty [2], in their study of Swedish firms found that the diversity of countries and the depth of experience increase both firms' absorptive capacity and their foreign market knowledge.

Hypothesis 2, which established a decreasing return effect of direct experience on export performance, does not seem to be supported in the regression. However, a decreasing influence of export externalities on export performance is confirmed. Following international research studies, while direct experience and experience from others can have a complementary effect, once the firm has developed enough direct experience they reduce their dependency to others. In this sense, Sapienza *et al.* [20] confirmed that as firms increase their international expansion, through different countries and increasing their international sales, the learning effort in their home country is reduced. Similarly, Shaver *et al.* [21] and Henisz and Macher [3] found that firms with broad international experience had lower performance if they rely on others' experience.

Taking into account these results, it seems that local networks among exporters become less relevant as firms develop their direct international experience, but these local relationships do not negatively affect firms' export performance. Export externalities are created by interactions among proximate exporters in the cluster that spillover relevant and tacit knowledge about their foreign experience.

A negative influence on firms' export performance could be expected by the "lock in" effect: local networks may impede firms to develop enriching and non redundant relationships with distant clients, competitors, distributors, institutions, etc. Nevertheless, it could be that these local networks among exporters are actually weak relations, having infrequent interactions that do not restring firms' capacity to establish relationships with other agents in international markets (McEvily and Zaheer [31]). Belso-Martinez [10] found that benefits from the cluster had a positive influence on export performance even considering firms' networks in international markets. Also, Molina-Morales and Martinez-Fernandez [47] could not confirm a curvilinear relationship between social interactions in clusters and innovation creation unless there were strong relations based on mutual trust.

Along with these results we observe that the square of direct international experience, measured either by the number of exporting years and the number of countries, has a negative and significant effect on export performance. This implies that direct experience increase export performance only up to a point where it becomes negative. Some international business studies have found similar results, considering it consequence of firms' coordination costs. Firms have to spread their limited managerial resources across different markets having problems to coordinate them all (Chiao *et al.* [61]).

VI. IMPLICATIONS AND FUTURE RESEARCH

This research has tried to analyze the role that knowledge plays in increasing firms' export performance. As it has been broadly considered, the lack of knowledge is the main limitation that firms face to increase their foreign sales. We have considered two interrelated sources of knowledge: firms' direct international experience and indirect experience from other clustered firms –export externalities. First, we have found that these two sources of knowledge are complementary, because direct international experience increases firms' capacity to identify, assimilate and exploit external knowledge from other proximate exporters. As long as firms learn from their direct experience they also create the internal routines and procedures that make them more capable of learning from external sources. Secondly, this positive influence of direct export experience on the firms' absorptive capacity become less relevant as firms develop more and more export experience. It is firms with little export experience which most benefit from local export externalities, while firms with broad export experience hardly are affected by them. Moreover, it seems that these local networks among exporters are weak relationships that do not restring their ability to establish relationships outside the cluster.

These results have several implications for managers, policy markets and researchers. Relatively to managers, this study draws attention to the internal characteristics of the firm as their main condition to benefit from local knowledge spillovers. It has been broadly recognized that cluster benefits exist for just being physically located proximate to similar firms and institutions, so firms would become exporters easier if they are in a cluster. Nevertheless, firms need of internal routines and procedures that allow them to learn from other exporters about foreign markets. That is, managers that want to increase their international sales, along with being physically proximate, they need of absorptive capacity in order to be able to learn from their neighbours.

From a policy-maker perspective these results may indicate that clusters can have a positive influence on firms' international presence and local economic development.

Moreover, we have observed that local knowledge spillovers favour the export performance of firms with little previous experience in foreign markets, without negatively affecting the performance of those with broad experience. Local traditions, shared history and institutional involvement create a favourable environment for local knowledge exchange among firms. Rather than promoting tight relationships among clustered firms that reduce their

openness, or trying to replicate these advantages in new agglomerated spaces, it seems that firms would benefit most by keeping and protecting their local and naturally driven environment.

Finally, this study was prompted by the interest in understanding the role that export externalities and firms' direct experience may play in increasing firms' international presence. While abundant studies have analyzed it, little studies have integrated the regional perspective with existing research on international business. In this study we have tried to bring them together. In this sense, some of the results obtained in this work, and limitations that are associated could be improved in future research. In particular, the relationships among exporters could be enriched with a deep analysis of the networks that are created among them and their position inside of the cluster. Although it is considered that as firms have more knowledge they have a more central position in the cluster (Morrison and Rabellotti [18], it would be interesting to deeply analyze it.

Future research could also consider how the characteristics of the local networks may affect firms' absorptive capacity. In this study we have played attention to the internal characteristics of the firm, and in particular their previous experience to explain firms' absorptive capacity. It could be that firms are also affected by the external conditions of the cluster, such as their relations with institutions, or their role in the network as Expósito-langa *et al.* [63] have considered. In this line, we have assumed that firms that contribute most to knowledge spillovers are other exporters. While most previous studies have also considered it, it could be that other agents from the cluster, such as providers, distributors, or local competitors could also have a positive influence on increasing export performance.

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TABLE 1
TOBIT ESTIMATIONS RESULTS FOR THE FIRMEXPORT PERFORMANCE (MARGINAL EFFECTS ARE COMPUTED AT THE SAMPLE MEANS)

Variables	Model 1 <i>Controls for H₁ & H₂</i>	Model 2 <i>Model without interaction</i>	Model 3 <i>Test of H₁</i>	Model 4 <i>Test of H₂</i>	Model 5 <i>Model without interaction</i>	Model 6 <i>Test of H₁</i>	Model 7 <i>Test of H₂</i>
Links with local institutions	0.491** (0.201)	0.453** (0.204)	0.438** (0.201)	0.478** (0.200)	0.343* (0.207)	0.309 (0.204)	0.313 (0.195)
R&D intensity	0.025 (0.035)	0.028 (0.035)	0.024 (0.035)	0.028 (0.035)	0.029 (0.035)	0.025 (0.034)	0.033 (0.033)
Advertising	0.052*** (0.019)	0.052*** (0.018)	0.055*** (0.018)	0.056*** (0.018)	0.045*** (0.018)	0.045*** (0.018)	0.038** (0.018)
Firm size	0.257*** (0.082)	0.204** (0.098)	0.170* (0.098)	0.119 (0.102)	0.138 (0.096)	0.107 (0.095)	0.034 (0.094)
Firm age	0.054 (0.092)	0.019 (0.098)	0.002 (0.097)	-0.038 (0.099)	0.031 (0.091)	0.055 (0.090)	0.036 (0.087)
Export externalities		0.177 (0.533)	-1.293 (0.846)	0.019 (0.600)	0.099 (0.520)	-1.166 (0.764)	-0.013 (0.529)
Years exporting		0.008 (0.008)	0.002 (0.008)	0.039** (0.019)			
Years exporting ²				-0.0004** (0.000)			
Countries exporting					0.020** (0.008)	0.008 (0.010)	0.098*** (0.022)
Countries exporting ²							-0.001*** (0.000)
Export externalities *Years exporting			0.153** (0.069)				
Export externalities *Years exporting ²				0.001 (0.002)			
Export externalities *Countries exporting						0.159** (0.071)	
Export externalities *Countries exporting ²							-0.002 (0.002)
Prob> chi2	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.074	0.077	0.089	0.091	0.088	0.100	0.1282

N=135. The value in parenthesis is standard deviation. * P<0.1 ** P<0.05 *** P<0.01