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Export performance in Spanish wineries: the role of human capital and quality management system

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Abstract: The aim of this paper is to research the effect of human capital and Quality Management System (QMS) on the export performance of wine firms. The empirical analysis is carried out using data from a sample of Spanish wineries and performing Tobit regression models. In relation to human capital, the results show that only the specific human capital is associated with superior export performance of wineries whereas the general human capital although it has a positive coefficient, it is not statistically significant on the export performance of wine firms. The results related to Quality Management System show that those wine firms certified with the ISO 9000 standard of QMS have better export performance.

Keywords: Galician wineries; international business training; QMS ISO 9000; resource-based view; Tobit models.

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1 Introduction

Exporting is by far the most popular and widespread form of internationalisation (Leonidou and Katsikeas, 1996) and often the first step in the internationalisation process, especially for small- and medium-sized enterprises – SMEs (Dhanaraj and Beamish, 2003). In particular, for wine firms -our research target – the internationalisation is often synonymous with export orientation, where companies do not make any development in their international orientation and simply remain exporters (Santini and Rabino, 2012).

Export activities are very important both from a macroeconomic and microeconomic perspective. From a macroeconomic perspective, expanding a country's exports can enhance national productivity, job creation and economic growth. At the firm's level, exporting can help leverage production capacity, enhance product and operational innovation and improve the bottom line (Piercy et al., 1998). Thus, understanding determinants of export success is important for both owners/managers and government institutions. In that sense, over the last five decades much research has been conducted in different sectors, regions and countries identifying factors (which can be divided into external, i.e., factors that lie outside the boundaries of the firm, and internal factors, i.e., those that lie inside the boundaries of the firm) predicting a firm's export behaviour (excellent reviews can be found in the works of Miesenböck, 1988; Zou and Stan, 1998, Sousa et al, 2008; Leonidou and Katsikeas, 2010). However, empirical research addressing single sectors, in particular, is scarce, though it is recognised that single industry studies have increased value in export literature (Silverman et al., 2004). In this way, we hope to contribute to the empirical evidence about export performance by focusing on firms from the Spanish wine industry.

The Spanish wine industry takes on a role of relevant importance in the international scenario, with a concentration in 2011 of 13.6% of surface under vineyards, followed by France (10.6%) and Italy (10.2%), and 12.6% of the world wine supply, preceded only by France (18.7%) and Italy (15.7%), and 22.4% of the world export, proving itself as the second ranked exporter after Italy (24.4%) (data collected from Crescimanno and Galati, 2014).

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Research into the export performance of wine firms has been conducted in different contexts (e.g., Lages, 2000 for Portuguese wineries, Silverman et al., 2004 for US wineries, Karelakis et al., 2008 for Greek wine firms, Maurel, 2009 for French wineries, Liberman et al., 2010, for Chilean wineries, Bardaji et al., 2014 for Spanish wineries, Galati et al., 2014 for Italian wineries). However, no one single study, to the best of our knowledge, has conducted research into wine firms producing wine with the same Designation of Origin (D.O). Thus, our research objective is to contribute to the understanding of the export performance of wine firms by analysing the effect of some internal and intangible factors (human capital and organisational resources) on the export intensity in a context of firms with the same D.O. Our theoretical analysis is conducted under the Resource-Based View approach (RBV). The RBV provides an interesting framework for analysing a firm's strategic behaviour by focusing on the set of resources that belong or that have been externally acquired by companies and over which firms settle their competitive advantages. In particular, those firm resources called "intangibles" – technological, organisational, human and reputational – are one of the most capable to generate competitive advantages (Hall, 1992) and, therefore, facilitating a firm's internationalisation (Delgado-Gómez et al., 2004). As such, our research question can be formulated as follows: Do a firm's intangibles – human capital and organisational resources – affect the export performance of wine firms? We consider two dimensions of a firm's human capital: general human capital and specific human capital. With respect to organisational resources, we focus our attention on the firm's quality management system (QMS).

This study seeks to contribute to academic literature in a number of ways. First, we both replicate and extend previous research on (wine) firms' export performance by focusing on the internal factors as the main determinants of internationalisation (Galati et al., 2014; Plá-Barber and Alegre, 2007). First, with respect to replication, we explore whether a firm's internal and intangible resources – human capital and organisational resources – are associated with the widely explored intensity of exporting measure (that is, sales revenue generated by exports as a proportion of total sales revenue). Export intensity, although it has attracted some criticism as a measure of internationalisation performance (Katsikeas et al., 2000), is widely used and it allows comparison with the existing body of knowledge. Export intensity is a strategy outcome influenced by the resources available to the firm, such as the so-called intangible resources (Amadieu et al., 2013). Second, with respect to extending previous work, we explore whether the extent and nature of a firm's human capital (we distinguish within the construct of human capital two components (Becker, 1975): general human capital and specific human capital) and organisational resources (QMS, ISO 9000 model) shapes wine export intensity. Third, we also extend the understanding of the relationship between those internal factors and exporting by using a very homogenous context – single sector and also firms producing the same D.O wine – because it allows us to obtain greater accuracy on the effect of human capital and organisational resources on export performance. One of the advantages of a single-sector study is the greater accuracy and validity of the findings when compared with results based on the industry in general (Castaldi et al., 2004). Moreover, within the wine industry, wine is a product whose features can be deeply influenced by the territory where it is produced, contributing to the creation of a competitive advantage – a valuable signal of product differentiation [see i.e., Josling (2006)] influencing their export performance (Bardaji et al., 2014).

In relation to our empirical methodology, we use data from 60 wine SME settled in the same geographical region and producing wine under the designation/appellation of origin (D.O), “Rias Baixas” wine¹, that employed between 3 and 46 employees (mean sample 12.066 employees). Factors associated with the intensity of exporting are explored using Tobit regression models. This technique avoids biased and inconsistent parameters estimation in the presence of variables such as export intensity, the values of which run between 0 and 100.

The rest of the paper is structured as follows: in the next section we develop the theoretical part of the paper and derive the hypotheses. Next, the data collected and the research method are described. Then, results from the multivariate regression analyses are reported; key findings are discussed and some limitations and future research questions are outlined. Finally, in the last section, conclusions are presented.

2 Theoretical insights and derivation of hypotheses

2.1 The resource-based view and internationalisation

The Resource Based View (RBV) is one of the main theoretical perspectives in business strategy literature, and is lately gaining momentum in international business (Fahy, 2002), with contributions from a wide variety of authors and institutions around the world (Peng, 2001). The appropriateness and explanatory power of the RBV for the study of the export performance of the firm as well as its increasing use in international business research have been confirmed by numerous scholars (e.g., Dhanaraj and Beamish, 2003; Ibeh and Wheeler, 2005; Katsikeas et al., 2000; Matanda and Freeman, 2009; Wheeler et al., 2008; Westhead et al., 2001). Derived from the seminal works of Penrose (1959) and Wernerfelt (1984) this approach suggests that firms can be seen as a collection of tangible and intangible productive resources, imperfectly imitable and specific to each firm, which allows it to compete successfully against other firms (Amit and Schoemaker, 1993; Barney, 1991; Dierickx and Cool, 1989; Peteraf, 1993). Bloodgood et al. (1996) further build on this idea arguing that those firms, which present unique bundles and combinations of resource stocks, might have a higher proclivity towards internationalisation. Similarly, Hit et al. (2006) suggest that, in order to be successful, business ought to have the appropriate resources for international expansion. Of all firms’ resources, those that have a more strategic and competitive potential are the so-called intangibles. Intangible resources are by their very nature – information and knowledge-based – the most likely to fulfil the requirements to generate competitive advantages: rare, valuable, difficult to imitate and non-substitutable (Barney, 1991; Hall, 1992). Therefore, intangible resources are one of the firm’s key resources for increasing a firm’s competitiveness that will facilitate the firm’s expansion abroad (Delgado et al., 2004; Amadiou, 2013). According to Grant (1991), intangible resources encompass four kinds of resources: technological, human, organisational and reputational. In this study, we focus our attention on the impact of human resources – human capital – and organisational resources – quality management systems – to generate export competitive advantages (cost advantages and differentiation advantages; Porter, 1985) of wine firms - see the conceptual model of firm export-performance depicted in Figure 1. The other intangibles, technology and reputation, although very important firms’ resources, in our context are not differential factors that can create export competitive advantages, because

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wine firms are low-technology, and all firms produce wine with the same designation of origin (D.O), so inter-firm reputation can be considered similar.

2.1.1 Human resources: human capital, competitive advantages and export performance

Human resources as intangible resource refer to the skills, knowledge and behaviour of the firm's employees (cf. human capital). Many RBV scholars identify human resources as a firm's resource capable of offering competitive advantages (Colbert 2004). Human capital may be linked to situations of specificity, complementarity, history dependency and causal ambiguity that assures its inimitability and value (Becker and Gerhart, 1996) and therefore its capacity to generate competitive advantages. On the other hand, and from the human capital theory (Becker, 1975) it is generally assumed that individuals with broader pools of human capital resources will report superior levels of productivity. Therefore, the firm's endowment of human capital will increase a firm's competitiveness, and thus its capacity to enter and sell products in international markets. In that sense, Piercy et al. (1998) state that the primary challenge in this undertaking often does not lie in the need for extraordinary technological or financial resources (although these resources certainly can be important at times), but more in the skills and knowledge required of firms' managers and employees to successfully serve a foreign market.

In order to gain further insights into the effects of human capital on export performance we made a distinction between general human capital and specific human capital (Becker, 1975). General human capital implies that individuals possess some general background, knowledge and skills that can be used in a broad spectrum of tasks, whereas specific human capital implies that individuals possess some specific knowledge and skills that make them more productive for doing some specific tasks, i.e., specific human capital has a more limited scope of applicability (Robson et al., 2012). General human capital is often examined in terms of individuals' education. Education can be an important source of knowledge, skills, problem-solving ability, discipline, motivation and self-confidence (Cooper et al., 1994). Employees who have been awarded a university degree have generally had their expectations and information processing and problem-solving skills raised, which will increase a firm's competitiveness, and therefore the capacity to sell products abroad. Specific human capital is a kind of human capital that is acquired either through experience or through ad-hoc training – e.g., MBAs, specialisation courses in some areas, etc. – that provides individuals with very specific skills. Employees' training and experience in international business can develop their specific human capital in a way that they acquire some special abilities and skills to deal with international activities. In that sense, Black et al. (1991) and Kaynak and Kuan (1993) argue that international business training allows the identification of best business opportunities abroad and the selection of the best strategy to compete in these markets. In addition, it facilitates the contact and relationship with distributors operating in the target markets, helping to create the appropriate climate for the relationship to continue in the long run. Therefore, specific human capital related with international business training is assumed to have a positive influence on a company's export results.

In sum, we can argue that those wine firms that have a better endowment of human capital resources (general human capital – related with education – and specific human capital – related with international business training) should have higher levels of export performance. This led us to propose the following hypotheses related to human capital:

Hypothesis 1a: Wine firms with greater levels of general human capital – general education – will be associated with higher levels of export performance.

Hypothesis 1b: Wine firms with greater levels of specific human capital related with international business training will be associated with higher levels of export performance.

2.1.2 Organisational resources: the quality management system, competitive advantages and export performance

Organisational resources can be understood as those resources that determine the internal coordination of firm's activities (cf. with the idea of organisational routines of Nelson and Winter, 1982). In that sense, a very important kind of organisational resource is the adoption/possession of a firm's Quality Management System (QMS). QMS are primarily responsible for the effectiveness and efficiency of the entire set of processes and activities taking place inside the firm to ensure the quality of their products or services, i.e., that product meet customers' requirements. This sophisticated demand has led to the importance of implementing a management system that is entirely quality oriented, i.e., a total quality management system (TQM). TQM requires firms to coordinate a wide range of behavioural, tacit and intangible resources, its dissemination stands as both support and a challenge to the new emphasis on firm-specific resources in the strategic management research (Powell, 1995). According to Powell (1995) TQM can produce economic value, i.e., competitive advantages to the firm due to certain tacit, behavioural, imperfectly imitable intangible resources, such as open culture, employee empowerment, and executive commitment. This result is consistent with the resource-based notion of complementarity resources (Barney, 1991), and suggests that firms should focus their efforts on developing the underlying intangible resources that make quality management system implementation successful, i.e., on creating a culture within which these procedures can thrive.

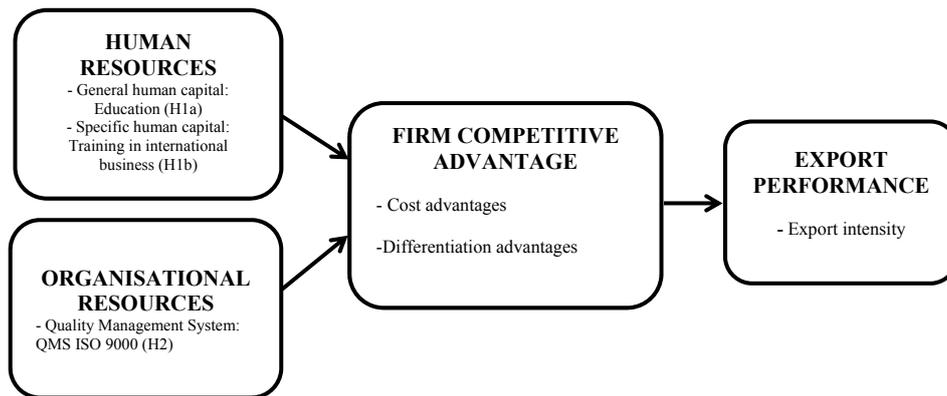
Numerous studies show that an effective quality management system can enhance a company's competitiveness and provide strategic advantages in the marketplace (e.g., Gómez-Conde et al., 2013; Giacomarra et al., 2016). Among the voluntary standards of quality management, the International Organization for Standardization (ISO) family aims to ensure that an organisation can deliver products or services that meet customer quality requirements (Teixeira-Quirós et al, 2010); it represents the main quality management system recognised worldwide (Camanzi et al., 2011). ISO 9000 QMS can generate competitive advantages for firms because firms can uniquely tailor their internal processes to maximise the efficient use of their particular resources (Anderson et al., 1999; Reed, et al., 1999; Naveh and Marcus, 2005; Flores, 2010). Adopting ISO 9000 QMS helps firms to reduce costs through clearly understanding processes, activities, responsibilities and control across an organisation (Archarya and Ray, 2000) and therefore it contributes to improve operational efficiency (Douglas et al., 2003). In addition, ISO 9000 QMS can help firms to differentiate their products or services from their rivals by adding more value and increasing customer satisfaction (Flynn et al., 1995). Other relevant voluntary quality standards for the export activity are the British Retail Consortium (BRC), the International Featured Standards (IFS Food), and GlobalGAP, among others, which have spread throughout the food sector to consolidate and enhance trade relationships with specific importing countries. Furthermore, firms that are certified as meeting international standards create favourable perceptions of their company or brand and attract buyers (Acharya, 2005). Therefore, the adoption of an

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effective and good quality management system will increase a firm's competitiveness and therefore its capacity to sell products in international markets. Thus, we propose the following hypothesis:

Hypothesis 2: Wine firms that implement a well-recognised QMS will be associated with higher levels of export performance.

Figure 1 Human resources, organisational resources and firms' export-performance: a conceptual model



3 Empirical methodology

3.1 Data and variables

3.1.1 Data and sample characteristics

Data were obtained from personal interviews in early 2013 on a representative sample of "Rias Baixas" wineries distributed all over the geographical region of Pontevedra, in the Autonomous Community of Galicia, North West of Spain. The survey sample comprised 60 "Rias Baixas" wineries out of a population of 176 "Rias Baixas" wineries (according to the census from the Wine Regulatory Board 2013) selected by simple random sampling. The personal interviews, guided through a semi-structured and open questionnaire, were conducted with the owner or manager and, in some cases, the export manager has participated (not all wineries have an export manager).

The questionnaire administered was previously pre-tested through telephone interviews to a few wine managers to verify the correct understanding of the questions and detect errors in their formulation. The questionnaire includes two main sections concerning the general characteristics of the wineries and intangible resource endowment of wineries (human capital and organisational resources). More in detail the first section includes general information regarding wineries' activity: number of employees, first year of activity since foundation, export intensity, export destinations, export channels and participation in institutional programs for internationalisation. The second section includes (1) information about the firm's human capital endowment regarding the number of employees with university or technical degree and employees with some training in international business – either in the form of work experience abroad, and/

or proficiency of foreign languages and/or specific courses on international business and (2) information about the firm's organisation resources endowment regarding the implementation of a quality management system (ISO standard).

Table 1 shows the main characteristics of the sample. The "Rias Baixas" wineries comprise a significant number of SMEs, more than 96% of which employs fewer than 30 workers. Besides, over the total sample, the highest percentage of firms (45%) are micro-firms (firms that employ fewer than 10 workers, 27 wineries in our case) followed by firms with a size of between 10 and 20 employees (43%). Only 3.3% of the firms have more than 30 employees. Also, a very significant proportion of firms have run the business for more than 20 years (46, 6%). In relation to the export activity a high proportion of exporters (72%) export more than 10% of their sales with a 12.1% exporting more than 50%. The primary export destination was USA, followed by UK and Germany. Other export destinations are Puerto Rico, Mexico, the Netherlands, Japan, Switzerland and Sweden. The main distribution channels for exporting are Ho.Re.Ca (Hostelry, Restoration and Catering) and large-scale retail trade.

Table 1 Sample characteristics

<i>Variables</i>	<i>No. of firms</i>	<i>% of firms</i>
<i>Firm Size (permanent employees)</i>		
<10	27	45.0
10–20	26	43.3
20–30	5	8.3
>30	2	3.3
Total	60	100.0
<i>Year in business</i>		
≤5	2	3.3
6–10	6	10.0
11–15	16	26.6
16–20	8	13.3
>20	28	46.6
Total	60	100.0
<i>Most important export destinations</i>		
USA	13	39.3
UK	6	18.2
Germany	4	12.1
Other	10	30.3
Total exporters	33	100.0
<i>Most important distribution channels</i>		
Ho.Re.Ca	26	78.8
Large-scale retail trade	3	9.0
Winehouse/wine bar	2	6.0
Other channels	2	6.0
Total exporters	33	100.0

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Table 1 Sample characteristics (continued)

<i>Variables</i>	<i>No. of firms</i>	<i>% of firms</i>
<i>Export performance (exports over total sales %)</i>		
≤10	9	27.2
10–25	10	30.3
25–50	10	30.3
>50	4	12.1
Total exporters	33	100.0

3.1.2 Description of variables

We describe the set of dependent, independent and control variables we use in the regression analysis.

3.1.2.1 Dependent variable

Export performance. Selection of the variable to measure export performance has generated a lot of controversy in literature because of the complexity of the concept (see the work of Matthyssens and Pauwels (1996) for an excellent review of the export performance indicators). In this sense, authors use alternative export performance indicators, such as export intensity (export to total sales ratio), the geographical scope of exports, export growth rate, or the contribution of exports to total profit (Leonidou et al., 2002; Wolf and Pett, 2000; Zucchella et al., 2007). Katsikeas et al. (2000) consider none of these measures to be superior to any other and Ruppenthal and Bausch (2009) highlight the persistent lack of a generally accepted export performance construct. Thus, the measure chosen here is the proportion of total wine sales – in monetary terms – derived from exports, in line with Ramaswamy et al. (1996), who consider this the best indicator of export activity. This variable has also been widely used in previous research (e.g., Bardají et al., 2014; Galati et al., 2014; Wolf and Pett, 2000; D'Angelo, 2012).

3.1.2.2 Independent variables

Human resources (human capital). Within the construct of human capital, we can distinguish two elements: one related to demographic characteristics given by birth, which cannot be changed, invested in or improved upon (e.g., individual's gender, age and parental background). They reflect non-intellectual elements of human capital. The other element is related to education and training, which reflects an intellectual element of human capital. This element can be considered a measure of the quality of human capital (i.e., lower levels of human capital or higher levels of human capital), in the sense of knowledge, skills, problem-solving ability, etc. which are related to education and training indicators (Becker, 1975). We use this approach to measure human capital. Besides, we distinguish two dimensions within the (intellectual) human capital construct: general human capital and specific human capital. Among more direct and the intellectual measures of general human capital, education is one of the most frequently examined (Robson et al., 2012). Therefore, we use the proportion of employees with

technical or university studies over the total employees as a measure of the level of the firm's general human capital (e.g., Wagner, 1996). In relation to specific human capital, there is not a universally used indicator for it (Robson et al., 2012). In that sense, the training and experience in international business that employees have could be considered as a certain type of specificity in human capital (Stucki, 2016). Therefore, we use the proportion of employees with training and experience in international business over the firm's total employees as an indicator of the level of a firm's specific human capital.

Organisational resources (quality management system). We use as a proxy for quality management system, the ISO 9000 model² that is one of the most well-known quality systems worldwide (Camanzi et al., 2011). The ISO 9000 certification is the primary unit of measurement and proof of quality internationally (Escanciano et al., 2001), and due to its growing widespread acceptance, ISO 9000 is becoming an important factor in international trade (Gill, 2009), almost an imperative for companies that export to the European Union (EU) where buyers often explicitly request ISO 9000 certification (Erel and Ghosh, 1997). Therefore, we use a dichotomous variable that indicates the firms' ISO 9000 certification.

3.1.2.3 Control variables

Based on previous research, we include two control variables, the age of the firm and the support for internationalisation that firms can receive from public institutions. From a resource-based perspective, the age of the firm could be considered as proxy for the firm's knowledge of the business, especially through experiential learning (Karlsen et al., 2003) and the accumulation of business experience enables the SME to develop certain capabilities that could help the export activity. However, the empirical research into the relationship between the firm's experience and the subsequent export performance reveals rather contradictory results. Some scholars have observed a positive relationship between the age of the firm and the company's export intensity (e.g., Majocchi et al., 2005), others have reported that younger firms obtained better export results in terms of intensity and sales (e.g., Badauf et al., 2000), and in some studies no linkage has been detected (Nassimbeni, 2001; Galati et al., 2014). We introduce this control variable in the form of the number of years since the firm's start-up. In relation to the institutional support for internationalisation (e.g., export-support schemes; information services, financial aid) this can help firms reduce the risks and obstacles associated with penetration into international markets and to motivate the engagement in international activities and expanding their export activity. Although literature on the subject is inconclusive (Ruppenthal and Bausch, 2009) there is some evidence that public export promotion schemes have a positive impact on export performance and its determining factors (e.g., Gerçtürk and Kotabe, 2001; Alvarez, 2004; Kang, 2011; Durmusoglu et al., 2012). In the case of Spain, ICEX³ is the main institution that provides services to Spanish companies in order to promote exports and facilitate their international engagement. We consequently build a dichotomous variable indicating whether the firm has received some export institutional support from the ICEX.

Another important variable that has been widely analysed in the empirical literature on firms' export behaviour was the size of the firm (Calof, 1994) evidencing that larger firms are more likely to export and also, although the consensus is weaker on this point,

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to export more intensely (e.g., Bonaccorsi, 1992; Wagner, 2001). However, given that our sample firms are (very) small (over 90% of firms have fewer than 30 employees), we do not feel it necessary to include this variable, obtaining therefore, a more parsimonious model.

3.2 Econometric analysis

Econometric analysis of the relationship between export performance and independent variables comprises a parametric test of means and regression analysis. The test of means allows us to compare the two subgroups of firms – exporting firms and non-exporting firms – to prove if there is any association between the means of human capital and organisational resources of the firm and its export behaviour. Then, a regression analysis of the relationship between the export performance and the explanatory variables is carried out by means of TOBIT models (Tobin, 1958) – also known as models of limited dependent variable – which we estimate by maximum likelihood. The estimation through Ordinary Least Squares (OLS) is not the optimal strategy, given that it does not take into account the distribution of the endogenous variable (Export intensity). This variable is in the form of a percentage whose value lies between zero (no foreign sales) and 100 (all the firm's sales are foreign sales) and the adjusted values of a linear regression model do not have the inherent restriction of lying between zero and 100. Hence, Tobit models avoid bias and inconsistent parameter estimation in the presence of variables such as export intensity. In addition, these models prove to be more suitable when the dependent variable is also characterised by accumulations around a certain point, in our case around zero.⁴ Econometric analyses are performed using Eviews 5.0

Table 2 Description of variables

<i>Variable</i>	<i>Description</i>
<i>Dependent</i>	
<i>Export performance</i>	
Export intensity (EI)	Proportion of a firm's total sales represented by exports
<i>Independent</i>	
<i>Human Resources</i>	
Generic Human Capital (GHC)	% of a firm's employees with technical or university studies
Specific Human Capital (SHC)	% of a firm's employees with training/experience in international business
<i>Organisational Resources</i>	
Quality Management Systems (QMS ISO 9000)	Dichotomous variable taking value 1 if the firm adopts a QMS ISO 9000
<i>Control</i>	
Firm's Age (Age)	Number of years since start-up
Institutional support (ICEX)	Dichotomous variable taking value 1 if the firm has received export institutional support from ICEX

4 Empirical results

4.1 Mean comparison test

Table 3 shows the mean comparison test. As can be seen, there are statistically significant differences ($p < 0.01$) between exporters and non-exporters in relation to Specific Human Capital (training in international business) and quality management system (QMS ISO 9000) but Generic Human Capital (technical or university education) does not reveal statistical differences between the two groups. Therefore, in terms of human resources wine exporting firms have higher and significant levels of Specific Human Capital but not Generic Human Capital and in terms of organisational resources, higher and more significant levels of QMS ISO 9000 than non-exporting ones.

Table 3 Mean comparison tests

<i>Variables</i>	<i>Exporting firms (n = 33)</i>	<i>Non-exporting firms (n = 27)</i>	<i>Diff</i>
<i>Human resources</i>			
Generic Human capital (technical studies/university degree)	0.66	0.52	0.14
Specific Human capital (training in international business)	0.16	0.00	0.16***
<i>Organisational resources</i>			
QMS ISO9000	0.36	0.07	0.29***
<i>Mean export intensity (%)</i>	0.26	0.00	

Note: *** Significant at the 0.01.

4.2 Regression analyses

Table 4 displays the different estimates of Tobit models. We run several regression models, first only introducing each of the independent variables one by one to test the hypothesis individually and then all together in a “full model”. The reason for constructing these models in that way – step by step – is to detect whether there is any sensitivity depending on what variables are introduced into the regressions, allowing us to verify if the results are consistent between the different estimations and therefore to obtain a higher level of robustness and reliability in our analysis. Models 1, 2 and 3 were performed by introducing each of the proxy variables for human resources and organisational resources separately. Then, model 4 was performed as an “expanded” or full model of export performance introducing all of the proxy variables employed for human and organisational resources. Note that in the full model (model 4) the variable for General Human Capital was removed because in the first model (model 1) the coefficient for General Human Capital is not statistically significant on export intensity. All models have a reasonable explanatory power.

With regard to the effect of human resources on firms’ export intensity, the results are diverse, thus corroborating the picture suggested by the previous analysis – Mean Comparison test. The results show that the level of a firm’s General Human Capital does not affect export intensity (this variable is not statistically significant at the 0.1 level or lower). Thus, there is no empirical evidence to support hypothesis H1a. However, the

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firm's Specific Human Capital, which accounts for the specific training in international business of a firm's employees shows a positive and highly significant effect ($p < .01$) on export intensity in the "simple" model (model 2) and in the full model (model 4). Therefore, hypothesis 1b is supported. With respect to organisational resources, the coefficient of quality management system (QMS ISO 9000) shows a positive and highly significant effect ($p < .01$) on export intensity in the "simple" model (model 3) and in the full model (model 4). Therefore, hypothesis 2 is supported.

To sum up, those wine firms with higher levels of Specific Human Capital (proportion of the firm's employees with training in international business) and that have a QMS ISO 9000 have better export performance. On the other hand, higher levels of General Human Capital do not affect a wine-firm's export performance.

In relation to 'control variables', Age and Icxex, the evidence on their effect on a firm's export intensity is not consistent across all models presented. In some models the firm's age and institutional support from the Spanish Foreign Trade Institute (Icxex) showed statistically significant effects (models 2 and 4 for Age – although the significance is for low levels of p-value – and models 1 and 3 for Icxex), while in other models they do not (models 1 and 3 for Age and models 2 and 4 for Icxex).

Table 4 Regression results of Tobit analysis (dependent variable: export intensity)^a

<i>Independent Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Constant	-0.282026** (-1.880041)	-0.289524*** (-3.062651)	-0.179256** (-2.190589)	-0.271785*** (-3.432181)
<i>Human Resources</i>				
Generic Human Capital (Technical Studies or University Degree)	0.186372 (1.176233)			
Specific Human Capital (Training in international business)		1.953189*** (5.336602)		1.508757*** (4.925417)
<i>Organisational Resources</i>				
QMS ISO 9000			0.318869*** (4.747408)	0.236821*** (4.165951)
<i>Controls</i>				
Age	0.004681 (1.450525)	0.005383** (2.071712)	0.002508 (0.963486)	0.003775* (1.712610)
Institutional support (icex)	0.241514*** (2.847281)	0.068725 (0.954037)	0.162449** (2.432646)	0.042373 (0.707358)
<i>Indices</i>				
R-squared	0.106930	0.310355	0.451539	0.561434
Adjusted R-squared	0.041979	0.260199	0.411651	0.520826
Left censored obs	27	27	27	27
Uncensored obs	33	33	33	33
Number of firms	60	60	60	60

Notes: ^a Upper number in a cell is a parameter estimate, numbers in parentheses are z-statistics; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

5 Discussion

5.1 Key findings and implications

Despite a growing body of empirical literature, focusing on the internationalisation of SMEs, and particularly on the determinant factors responsible for successful export performance, only a few studies have addressed single sectors in particular, though it is recognised that single industry studies have increased value in export literature (Silverman et al., 2004). Therefore, this study contributes to fill this gap by examining the export performance for wine-firms. More specifically, this study has explored the validity of a firm's intangible resources – human capital and organisational resources – on the export performance of Spanish wine-SMEs that sell wine under the same designation of origin (D.O), “Rias Baixas” wine. Such a homogenous focus – same sector and same D.O – allowed us to get more reliable conclusions about the effect of human capital and organisational resources on the export performance, given that differences in the international recognition of D.O label affect the export performance of wineries (Bardaji et al., 2014). Our results suggest the important role played by intangible resources – human capital and organisational resources – in achieving competitive advantages that may shape variations on a firm's exporting performance outcome.

In relation to firms' human capital resources, the distinction made between general and specific human capital leads us to a very interesting finding in relation to export performance. General human capital – measured as the proportion of a firm's employees that possess technical studies or a university degree – is not statistically significant on wine-SMEs export intensity, whereas the specific human capital – measured as the proportion of a firm's employees that have some training in international business (MBA/international trade courses or international professional experience) – show a highly significant effect on export intensity. Therefore, our results suggest that only specific human capital can generate a firm's export competitive advantages. Specific human capital, related with training and knowledge in international business, likely yields these results due to their impact on the firm's capacity to better operate and do business in the highly demanding international business conditions, ultimately leading to export success (Li et al., 2004). These results are in line and complement previous findings in the international business literature (Galati et al., 2014; Kaynak and Kuan, 1993; Knowles et al., 2006; Leonidou et al., 1998; Stoian et al., 2011; Suárez and Alamo, 2005; Williams and Chaston, 2004), although in all these studies the analysis of the human capital refers only to the manager/owner-entrepreneur.⁵ In general, these studies show that managerial/entrepreneur human capital related to foreign language skills and international business knowledge are the most influencing antecedents of export performance. In addition, the study of Robson et al. (2012) suggests that entrepreneurs reporting long durations of business ownership experience can accumulate and leverage their specific human capital associated with social relations – greater networking – production and/or marketing distribution skills that increase their ability to enter international markets and to increase their exporting intensities compared to novice entrepreneurs. General human capital, contrary to our expectations, shows a non-statistically significant effect on wine-SMEs export intensity. Results along this line have been found in the works of Serra et al. (2012) and Suárez and Alamo (2005) where they indicate that there is no stronger association between the educational level of managers

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and export propensity. One possible explanation for this finding is that the level of general human capital can be an important factor for export competitiveness in the case of companies belonging to sectors that can produce substantial innovations in products or processes (e.g., chemicals; industrial and electrical machinery; automotive), while in traditional sectors – such as the wine sector – firms do not offer products that involve substantial value-added based on a breakthrough in process or technology. Thus the higher educational level of employees does not provide significant competitive advantages in those sectors. In that sense, and giving support to this argument, the study of Wagner (1996) found sectorial differences in relation to the effect of human capital on export intensity for German manufacturing firms. He shows that human capital intensity (measured as the proportion of employees with a university degree) is only significant on export intensity for firms belonging to the mechanical engineering industry, while for those firms belonging to stone, clay, pottery and glass industry, lumber and wood products industry and food, drinking and tobacco industry it is not significant. Thus, our results add some evidence on the role of human capital on exporting, particularly, general human capital, that can be contingent to industry sector. In addition, our result is in line with the study of Robson et al. (2012) that shows that the general human capital – education of entrepreneurs – is not significant in export performance.

The firm's organisational resources relating to quality management systems (QMS ISO 9000) model are statistically significant on the export intensity of wineries. This result is consistent with previous studies that have shown the positive economic impact of third-party quality certifications (e.g., Heras et al., 2002; Naveh and Marcus, 2005; Ferro, 2011). Most of these studies suggest that the adoption of quality standards improves an organisation's ability to internationalise. Gomez Conde et al. (2012) found that the use of management control systems and ISO certification positively affected the level of internationalisation of Spanish agrifood companies but did not directly influence performance. In the case of the wine industry, Liberman et al. (2010) argue that those wine firms – Chilean wineries – that are more internationalised are firms that have internalised the importance of quality in the highly competitive international markets, assuming the compromise to organise their business according to the rules and procedures of quality international standards (ISO, HACCP⁶ or equivalent) which provides a signal of guarantee of their products and services, facilitating their sales abroad. Recently, Giacomarra et al. (2016) analyse the existence of a relationship between the adoption of voluntary quality standards and economic performance, measured in terms of labour productivity and marketing behaviour, in the Sicilian wine sector. The authors found that wineries adopting voluntary standards exhibit better economic performance than non-certified wine firms.

Some implications for management and public policy may be derived from this study. In terms of management implications, our results highlight the importance of the specific human capital related to training in international business to generate export competitive advantages. In that sense, and derived from the human research management literature, some studies (e.g., Guthrie et al., 2009; Martin-Tapia et al., 2009) have demonstrated that the implementation of practices of HPWS (High Performance of Work Systems), that is, practices designed to enhance employees' skills and commitment such that employees become a source of sustainable competitive advantage (Levine, 1995; Pfeffer, 1994), will positively impact on firms' (export) performance. In addition, our study posits the importance of organisational resources, in particular, quality management systems for international competitiveness. In that sense, firms must achieve quality management

certifications such as ISO, HACCP or equivalent standards which, apart from the operational benefits, also provide reputation and credibility in international markets (Acharyya, 2005), favouring exports. Moreover, the more years a company has used ISO 9000, i.e., the greater the longevity of ISO 9000, there is an improvement and refinement of the organisational routines, rules and policies of the QMS by the firm, a better use and learning of these by employees and therefore the more likely the organisation is to increase their competitive advantage (Flores, 2010).

In terms of public policy, national authorities should be aware of the important role played by human capital and the quality international standards on internationalisation. In that sense, public programmes targeted at enhancing the skills of human capital to act in international contexts (e.g., the promotion of foreign languages as well as international business education and training programmes in both schools/universities and workplaces) and to encourage and help firms to adopt quality international certifications would benefit internationalisation and export success. Moreover, these government programmes are especially important for small- and medium-sized enterprises that may lack expertise, resources or competitive intelligence.

5.2 Limitations and future research

Inevitably, this study is not free from limitations, which provide future research opportunities. Firstly, any generalisation beyond the specific context of the study – firms in the wine sector domiciled in Spain – should be applied with caution. For example, the non-significant effect of general human capital on export intensity detected in this study may reflect peculiarities of the wine sector. This may be different or it may not apply in other sectors. In that sense, future research studies that provide further evidence about the link between human capital (distinguishing between general and specific human capital) and export performance by analysing different industry contexts (as well as to differentiate between specific overseas markets served) will augment our understanding of the role of human capital on export performance.

Secondly, the study was centred on a cross-sectional research design. Using panel data would be desirable to improve the explanation and strengthen the conclusions, allowing for the investigation of the effect of the QMS longevity and the experience and knowledge of human capital on export performance.

Thirdly, our models of export performance are under-specified and lack other factors both internal, such as the international marketing strategy of the firm/or marketing activities, as well as external factors, such as the competitive nature of the international environment. Therefore, new research using models that are more complete will provide better understanding of the export performance in the wine sector.

Finally, we have focused on firms from a single country. In this sense, a new avenue of research is to do a comparative analysis to find out if there are some factors that can explain the difference in the export behaviour of wine companies from different countries.

6 Conclusions

This study has presented new insights into the (wine) SMEs export performance literature by analysing the effect of firms' human capital and organisational resources –

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QMS ISO9000 – on export intensity, using a very unique dataset of 60 Spanish wine SMEs that sell products under the same designation of origin (D.O), “Rias Baixas”. The fact that the analysis considers single sector and single D.O jointly with the homogenous environment of a single sub-geographical region suggests the high reliability of the findings. One of the most striking findings is that the effect of human capital on wine SMEs export intensity depends on the human capital profile of a firm’s employees. A firm’s specific human capital, associated with ad-hoc training and knowledge in international business generates solid competitive advantages for exports, increasing the export performance. However, a firm’s general human capital (level of education, university or technical studies) does not generate export competitive advantages for firms in the wine sector. Therefore, the distinction made within the human capital construct between general and specific human capital allows us to improve the comprehension of human capital on export performance. In addition, organisational resources, related to QMS ISO9000, are a key factor for the success in international markets of wineries contributing to improve their sales abroad. Summing up, our findings suggest the importance of a firm’s internal resources, in particular, specific human capital and quality management systems, to improve export performance.

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Notes

- 1 The D.O "Rias Baixas" wine is produced in the Galician region (North West of Spain).
- 2 ISO (International Organization for Standardization) was founded in 1947 and it is the world's largest developer of voluntary International Standards. International Standards give state-of-the-art specifications for products, services and good practice, helping to make industry more efficient and effective. The standards established by the organization are also referred to as ISO standards (ISO 9000; ISO 14000...).
- ISO comprises a network of the national standards institutes of 162 countries, based on one member per country, with a Central Secretariat in Geneva, Switzerland that coordinates the system. These national standards bodies make up the ISO membership and they represent ISO in their country (www.iso.org).
- 3 ICEX is the acronym of Spanish Foreign Trade Institute – Instituto Español de Comercio Exterior.
- 4 For a more exhaustive detail of these models, see Maddala (1983) and Amemiya (1984, 1985).
- 5 Also, the sample used contains firms from different sectors.
- 6 Hazard Analysis and Critical Control Points.

Export performance in Spanish wineries

Appendix A: Correlation matrix and descriptive statistics

	<i>Mean</i>	<i>S.D.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1.General Human Capital	0.616	0.276	1				
2.Specific Human Capital	0.089	0.105	0.257	1			
3. QMS ISO 9000	0.350	0.480	0.011	0.330	1		
4. Age	21.633	13.183	-0.036	-0.074	0.103	1	
5. Icx	0.416	0.497	0.017	0.402	0.159	-0.149	1

Note: S.D.: Standard Deviation.