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Influence of CEO characteristics in family firms internationalization

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ABSTRACT

This research uses a survey dataset of 187 Spanish family firms to study the characteristics that may influence family firms in their decision of internationalize their activity. Based on individual and demographic variables, the study concludes that the CEO academic level of achievement influences the level of success in international expansion. In addition, the capacity for generating resources of the family firm provokes a lower resistance from family members to export. Moreover, we confirm that industry characteristics do matter in internationalization processes, noting that the specific market, product/service and technology characteristics influence the family firm internationalization. Contrary to expectations, the gender variable and the percentage of family members sitting on the board do not significantly predict the propensity to export.

Our findings suggest family firm leaders seeking greater levels of firm internationalization to seriously consider the qualification level of their CEO. These insights can be useful for regulators who have to develop programs for supporting sales internationalization, as well as owners and managers of family firms, who need to understand the CEO abilities that may improve their capacity to internationalize their business.

1. Introduction

Family firms are used to operate in domestic markets. However, in order to survive in a globally competitive market, they are obliged to internationalize (Claver, Rienda, & Quer, 2007; Fernández & Nieto, 2005, 2006; Graves & Thomas, 2006, 2008; Kontinen & Ojala, 2010), which consists of expanding its sales across the borders of global regions and countries into different geographic locations or markets (Hitt, Bierman, Uhlenbruck, & Shimizu, 2006). According to the Uppsala internationalization process model (Johanson & Vahlne, 1977), firms start by expanding to geographically and culturally close countries (with low psychic distance) and locating their operations close to the residence of family members. After gaining international experience, the firm continues gradually to expand to more distant countries and regions.[1] This process implies important changes in firms due to the fact that they should deal with the complexity arising of this process, doing their national products suitable for international customers (Knight & Liesch, 2002), being the CEO executives a key determinant to successfully deal with such complexity (Jaw & Lin, 2009).

Internationalization is positive for family firms (FF). It provides them an opportunity for growth and value creation (Hsu, Chen, & Cheng, 2013). Through internationalization, firms are able to reduce the risk and provide potential returns in a higher level than if they operate in domestic markets (Gande, Schenzler, & Senbet, 2009). However, the implementation of such a strategy is affected by a number of factors constraining this process, such as the great diversity among business cultures, customers, competitors, and regulations (Hsu et al., 2013), the evolutionary stage of the firm and the family's international orientation (Gallo & Sveen, 1991), the founder's age, education level (Casillas & Acedo, 2005; Davis & Harveston, 2000; Hsu et al., 2013; Tihanyi, Ellstrand, Daily, & Dalton, 2000) and experience of the CEO (Tihanyi et al., 2000; Tsang, 2001).

In recent years, a growing body of literature has focused on studying the degree of internationalization of FF and the factors which facilitate (e.g., long-term orientation, entrepreneurial behavior, high commitment and communication of family members, etc.) or restrain (e.g., limited growth objective, risk-aversion, restricted financial support, etc.) their export activities (Calabró & Mussolino, 2013; Colli, García-Canal, & Guillén, 2013; Fernández & Nieto, 2005, 2006; Graves & Thomas, 2006, 2008;

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[1] There are some family firms which internationalizes rapidly to several different countries, which are called "born global" firms (Weerawardena, Mort, Liesch, & Knight, 2007).

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Zahra, 2003). At the same time, extant literature studies executives' characteristics and their influence on economic firm variables. However, the association between family CEO attributes and export sales is scarce and most of the literature is based on large listed firms (Sciascia, Mazzola, Astrachan, & Pieper, 2013). In this context, just a few number of studies have examined the moderating effects of the characteristics of CEOs into the internationalization process (Hsu et al., 2013), being them the dominating person in FF (Feltham, Feltham, & Barnett, 2005). Based on the upper echelons theory, previous research finds the international experience (Kirca, Hult, Deligonul, Perryy, & Cavusgil, 2012), the age (Davis & Harveston, 2000; Hsu et al., 2013; Olivares-Mesa & Cabrera-Suárez, 2006), tenure (Herrmann & Datta, 2005), and duality of CEO (Hsu et al., 2013) as important factors influencing the international behavior. On the contrary, there are some studies considering factors that constrain the internationalization process. The lack of managerial capability (Fernández & Nieto, 2006; Gallo & García Pont, 1996; Graves & Thomas, 2006), the aversion to risk of the CEO (Fernández & Nieto, 2006; Gallo & García Pont, 1996), the conservative attitude of the family business (Gallo & Sveen, 1991) or even the involvement of the family in the business (Zahra, 2003) are among the main reasons for the internationalization constraint of FF.

Since empirical research on FF internationalization is inconclusive (Graves & Thomas, 2008), the main contribution of this paper is to continue and extend past efforts aimed at analysing the tendency of FF to internationalize. Then, the issue of how FF strives to manage and cope with the complexity arising from the internationalization of their operations is one of the most pressing issues in the fields of international and strategic management (Zahra, 2003).

We will focus on specific characteristics of CEOs that have not been studied previously in the internationalization literature of Continental countries. Specifically, we will analyze the effect of gender and specific factors constraining the internationalization process of FF. We will also study the effect of the education level of the CEOs in Spanish FF, the availability of financial resources and the presence of the family in the boardroom as determining factors for internationalization. In this paper, we shed light on these issues in one Continental European country, namely, Spain. The Spanish context provides an interesting setting to explore this question due to Spain is a small and medium-sized financial market with a growing importance in the world financial market (Marcelo, Quirós, & Lisboa, 2012) where the high ownership concentration and predominance of family-controlled firms is one of its main characteristics (La Porta, Lopez de Silanes, & Shleifer, 1999). In Spain, family businesses imply 90% of the total business, representing 60% of the Gross Domestic Product (GDP) and 66% of private sector employment (Instituto de la Empresa Familiar, 2015). In addition, in Spain, FF offer a better work environment with the main aim of achieving stable business conditions, which establishes the basis for continuous growth. It shows their importance and capacity to generate employment, as well as to their contribution to the creation of wealth.

As far as internationalization is concerned, it is an important issue to be studied because it contributes to the socio-economic development through increasing employment opportunities and reducing national deficits (Katsikea & Skarmeas, 2003; Leonidou, Katsikeas, & Piercy, 1998). However, Spanish FF enjoy of a lower export behavior than non-family firms and their export propensity, on average, is much lower for each year than those obtained by the SMEs (Sacristán-Navarro, Rico García, & Lafuente Ibáñez, 2004). In addition, several studies highlight that the FF internationalization process has been rarely analyzed (Claver et al., 2007; Claver, Rienda, & Quer, 2008; Fernández and Nieto, 2005; Gallo & García Pont, 1996), which justifies the interest of this study.

This paper contributes to the literature in several ways. First, we provide evidence on the link between family CEO characteristics and internationalization for a context in which ownership concentration is prevalent and the presence of FF is the natural type of companies. Second, we analyze how gender diversity affects the internationalization for FF, a question has not been addressed in previous studies. A focus on non-listed family firms and its gender diversity is essential to improve the recommendations on governance and help them to be better defined and tailored to this specific type of firms. Third, our paper contributes to the literature on CEO style, by noting that CEO education is an important key issue for FF, especially in those who want to internationalize their businesses.

We proceed as follows. Section 2 discusses previous literature and provides the motivation for our study. Section 3 includes the database and variable description of our analysis and methodology. Section 4 shows and discusses the results, while Section 5 summarizes the conclusions, describes limitations, and discusses implications for future research.

2. Theoretical background and hypotheses development

Lately, business literature has increased its interest in the way of top managers play an essential role in shaping organizational outcomes (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick & Mason, 1984; Loane, Bell, & McNaughton, 2007). According to Hambrick (2007) the best way to understand why organizations do and/or perform the things they do, it is fundamental to consider the biases and dispositions of their most powerful actors – their top executives. The base of these assumptions is on the upper echelons theory proposed by Hambrick and Mason (1984). It is based on the idea that managerial characteristics can be a useful measure to predict organizational outcomes. This theory argues that executives act on the basis of their personalized interpretations of the strategic situations they face, influenced by their cognitive base and their values. It indicates a person's values, skills, knowledge base and information processing abilities influences the decision-making process (Hambrick, 2007).

When a firm decides to expand to international markets, it has to deal with institutional and cultural characteristics which vary from country to country (Hsu et al., 2013). In order to succeed, and due to the complexity and uncertainty of the process (Nielsen & Nielsen, 2011), executives should possess knowledge that enable them to process information efficiently (Herrmann & Datta, 2002; Nielsen & Nielsen, 2011).

According to the resource-based view (RBV) (Barney, 1991) these intangible resources and capabilities provided by executives which are unique, valuable, and difficult to imitate, have an impact on the ability to come into international markets (Bloodgood, Sapienza, & Almeida, 1996) looking for competitive advantages and a greater profitability (Barney, 1991).

Therefore, the socio-cognitive capacities of executives related to their educational levels, such as open-minded attitude toward other cultures, greater abilities of processing information, openness to change, and flexibility and receptivity to change, are likely to play significant roles in ensuring success in the international context (Herrmann & Datta, 2005). Following this line of reasoning, a handful of studies focus on education as a proxy for the executive's cognitive orientation, knowledge base and information processing abilities which has an important impact on the firm's internationalization behavior (Herrmann & Datta, 2005; Tihanyi et al., 2000; Wang, Hsu, & Fang, 2008). It has also been found that CEOs with high educational background are better able to develop problem-solving skills when complex problems arise (Goll, Johnson, & Rasheed, 2007), report more corporate social responsibility information in small firms (Herrera, Larrán, Lechuga, &

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Martínez-Martínez, 2016), and place more weight on opportunities and less weight on threats than those who have not had such educational background (Karami, Analoui, & Kakabadse, 2006). Additionally, it is important to highlight that several studies find that FF run by more educated CEOs have a higher ability to enter into foreign markets (Barroso, Villegas, & Pérez-Calero, 2011; Cavusgil & Naor, 1987; Hsu et al., 2013; Simpson & Kujawa, 1974). Nevertheless, this characteristic has not been studied in a low investor protection environment such as Spain, characterized by a high ownership concentration and a high influence of families in the strategic decisions.

Therefore, based on the upper echelons and RBV theories and previous research, we propose the following hypothesis:

Hypothesis 1. The higher the formal education level of the CEO in family firms, the higher the ability to internationalize.

Recently, there has been a growing concern about gender diversity in board members in entrepreneurial activity. Previous literature shows that female-owned businesses may be less likely to export than male (Grondin & Schaefer, 1995). It can be due to export propensity demand a number of requirements which are considered as typically masculine (Welch, Welch, & Hewerdine, 2008). These differences between both genders could be explained by differences between male and female-owned firms (Orser, Spence, Riding, & Carrington, 2010).

On the one hand, a number of empirical studies show that, in contrast to male, female directors are more likely to have managerial skills, holding positions related to the 'soft' managerial issues, such as human resources, corporate social responsibility, marketing or advertisement rather than operation and marketing functions (Zelechowski & Bilimoria, 2004, 2006). Moreover, they also differ from men in terms of their previous professional experiences as they have non-traditional backgrounds (Singh, Terjesen, & Vinnicombe, 2008). Women directors are more likely to come from non-business backgrounds and hold more advanced diplomas (Hillman, Cannella, & Harris, 2002). Another stream of literature argues that women are less likely to start new businesses and their experiences from entrepreneurship may differ from that of their male counterparts (Bird & Brush, 2002). One of the reasons can be that women are more risk averse than men (Booth, 2009; Vandergrift & Brown, 2005), and the differential risk attitudes and characteristics between them affect corporate financial decisions (Wei, 2007). When the CEO is a woman, the firm risk level is smaller than when the CEO is a man (Khan & Vieito, 2013). Barsky, Juster, Kimball, and Shapiro (1997) or Jianakoplos and Bernasek (2007), among others, show that women have a lower propensity towards financial and investment risk than men. When the company needs to have an investment, women are more risk averse than men and this difference makes bigger with the uncertainty of investment (Schubert, Brown, & Brachinger, 2000).

Feminism theory can also be useful to understand why female-owned firms are supposed to be less likely to export than their male counterparts (Orser et al., 2010). It explains that society is based on a hierarchical system of power in which men enjoy a greater economic and social privilege than women (Kendall, Murray, & Linden, 2004). In their study, Orser et al. (2010) examines the linkages between export propensity and attributes of SMEs, with particular attention to the role of gender of ownership. They describe both the social feminist and the liberal feminist theories. Liberal feminism postulates that men and women are equally able and women can rationalize and solve problems as effectively as men. However, the subordination of women is due to the discrimination and structural barriers which prevent them develop their capabilities, only because they are deprived of some opportunities, such as education, receiving less of the material resources, social status, power and opportunities than their male counterparts (Fischer, Reuber, & Dyke, 1993). Consequently, gender differences can be attributed due to women are supposed to be less able to develop their full potential (Fisher et al., 1993). The social perspective explains that the influence of gender on export behavior can be explained through the social structure, power, class structure and politics. They conclude that the internationalization process of SMEs is not gender neutral and that compared to the male-owned firms, the female-owned ones are often smaller, less growth-oriented and R&D intensive, less likely to operate in sectors with a high likelihood of exporting and hence, less likely to internationalize.

Consequently, due to the different characteristics of the firms run by men and women and the high level of risk attached to the internationalization process we propose the following hypothesis:

Hypothesis 2. The higher the female presence in the running of the family firm, the lower the probability of reaching out to international markets.

According to Dunning's eclectic theory, firms choose the most appropriate form of entering into a new international market by taking into account their ownership (O), location (L), and internalization (I) advantages (OLI), which are competitive advantages that the firm may possess (Porter, 1980) and that can enhance its performance (Erdener & Shapiro, 2005). The source of these advantages can be explained through the firm's international experience, their adaptability of products/services and the technology intensity of their offerings, among other things (Brouthers, Brouthers, & Werner, 1996; Dunning, 1993). The literature suggests that FF often maintain the family's heritage and tradition, which is described as a set of basic assumptions and values, beliefs, policies, procedures and convictions that the family holds in relation to its environment (Gudmundson, Hartman, & Tower, 1999). It is known that FF are more conservative (Zahra, Hayton, & Salvato, 2004) and that they are characterized by maintaining their differentiation through the same activities and policies (Gallo & Sveen, 1991). Consequently, the more conservative the family is, the more difficult it is to change its objectives, business and product lines or markets (Miller, Steier, & Le Breton-Miller, 2003). Therefore, it will be harder for them to enter to foreign markets due to the fact that they have to deal with new markets, new customers and new competitors, which is an important change with regard to the original activity (Gallo & Sveen, 1991).

Taking into account all these aspects we pose the following hypothesis:

Hypothesis 3. The more conservative the family is regarding the product, service and technology, the lower the probability of exporting to international markets.

It is a fact that funding is a key resource to support successful international expansion (Fernández-Olmos, Gargallo-Castel, & Giner-Bagües, 2016). Financial resources are necessary to invest in manufacturing facilities and to boost production capacity in order to meet market demand abroad, implement country-specific R&D, and employ the required human resources to manage international trade, among other things (Graves & Shan, 2014). Nevertheless, in accordance to resource based view theory (RBV), if the company depends on external financial resources it has more probabilities to be influenced by the potential financer in the decision-making process. As a result, FF are often reluctant to accept external financing instead of the internal one (Basly, 2007), adhering to a pecking order (Myers & Majluf, 1984). They are more prone to be funded from within internal resources by the retention of earnings and the constitution of reserves.

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However, the amount of resources a firm has available determines its ability to respond to strategic opportunities or environmental threats, so that financial resources would improve the opportunities to expand into foreign markets (Zaniewska, 2012).

Consequently, we pose the following hypothesis:

Hypothesis 4. The higher the capacity for generating financial resources of the family firm, the higher the probability of exporting to international markets.

According to Chua, Chrisman, Steier, and Rau (2012) previous studies comparing family versus non-family firms are based on the assumption that FF are homogeneous organizations. However, becomes necessary a new approach to recognize the heterogeneity of FF (Chrisman & Patel, 2012). Chua et al. (2012), Pazzaglia, Mengoli, and Sapienza (2013) and Stockmans, Lybaert, and Voordeckers (2013) consider that this heterogeneity depends on generational stage, management team, CEO and the composition of the board of directors.

Under the agency theory, we expect that in the case of private FF the power dimension, in terms of the percentage of participation of family members on the board of directors, be important to moderate the presence of agency problems since the heterogeneity within FF depends on the relationship between the familiars (Stockmans et al., 2013). It is due to the fact that not all family members participate on the board of directors and just part of them control the decision making process in the firm. This point is covered in the context of FF by the concept of "governance-related heterogeneity" (Chua et al., 2012). Furthermore, a higher expected power dimension in any circumstances could give place to other opportunistic behavior not just regarding other family shareholders but external stakeholders, for example employees (Paiva, Lourenço, & Branco, 2016). Therefore, a boardroom with a high level of family members may increase asymmetric information between family members of the board and other family members without top management responsibility, enhancing agency costs within the family and affecting strategic decisions in the company. Then, according to the agency theory, family directors may have incentives to extract private benefits from other family members, as well as over minority non-family shareholders, being these incentives especially relevant when they have a high presence in the boardroom. Nepotism, hierarchies, family conflicts and entrenchment can also distract family directors from maximizing profitability, what can affect their decisions to internationalize.

This heterogeneity in FF may cause conflicts between owners, directors and managers in internationalization decision (Zahra, 2003), due to their different views on what is best for the firm and what is best for the family (Calabró & Mussolino, 2013). According to Zhara (2003) founders of FF may avoid international expansion because it may induce conflicts among family members who might resist internationalization fearing the loss of their inheritance and provoking resistance from family members who may feel their traditional domain is being threatened (Zahra, 2003). In this line, Gallo and Sveen (1991) and Gallo and García Pont (1996) suggested that the reluctance to accept outside expertise, risk avoidance, difficulties in hiring new managers with international responsibility, the lack of international cultural awareness are factors constraining FF internationalization. In this line, Fernández and Nieto (2005) found that family control was inversely related to international involvement.

According to the "resource-related heterogeneity theory", there is heterogeneity in the development of the rules, beliefs, and behavioral aspects within the FF that come from family-based human assets (Chua et al., 2012; Verbeke & Kano, 2010). In that sense, family directors can be board members not because of their expertise, skills and attributes but because of their family representation role.

Furthermore, under the resource-based view theory, the lack of qualified and professional directors is also considered a relevant barrier to internationalization due to the lack of advice, networks and resources necessary to foreign expansion (Cerrato & Piva, 2012). Then, the short number of adequate outside directors with experience in conducting foreign business may affect the propensity of the FF to export. This "advisory" role of board is especially relevant in the international expansion of small businesses (Johannisson & Huse, 2000). On the basis of this logic, the following hypothesis is suggested:

Hypothesis 5. The higher the percentage of family members on board, the lower the probability of exporting to international markets.

3. Method

In this section, we provide information about the sample design, variables definition and methodology used in the study to test our hypotheses.

3.1. Data description

Although the concept of FF has been extensively developed in previous literature, there is still no widely accepted definition of family business in academia (Astrachan & Shanker, 2003; Littunen & Hyrsky, 2000; Sharma & Zahra, 2004). Nonetheless, FF are different from other organizational forms because ownership (it controls at least 50% of the shares) and control (Chua, Chrisman, & Sharma, 1999). Moreover, the management positions and board presence are dependent on the family memberships (Fernández & Nieto, 2006; Westhead & Howorth, 2007) who, although they are supposed to compete for the same goals, they may conflict and influence the internationalization decision (Zahra, 2003).

In 2009, the European Group of Owner Managed and Family Enterprises (GEEF) and the Family Business Network (FBN) admit a firm to be defined as family when: 1. "The majority of votes are in the possession of the natural person(s) who established the firm, in the possession of the natural person(s) who has/have acquired the share capital of the firm or in the possession of their spouses, parents, child or child's direct heirs." 2. "The majority of votes may be indirect or direct". 3. "At least one representative of the family or kin is involved in the management or administration of the firm". 4. "Listed companies meet the definition of a family enterprise if the person who established or acquired the firm (share capital) or their families or descendants possess 25% of the right to vote mandated by their share capital".

Therefore, based on the existing literature and the GEEF definition, we consider a business as a family firm when more than 25% of the family members are involved in the management and the family holds more than 50% of the capital ownership.

In that line, previous literature shows that outside directors can contribute important resources to the firm, such as general business knowledge, contacts and reputation, which can foster the advisory role of the board and improve the strategy development and implementation process (Bammens, Voordeckers, & Van Gils, 2008; Gabrielsson & Winlund, 2000; Maseda, Iturralde, & Arosa, 2015). Moreover, FF with the participation of outsiders performed significantly better than those firms with family-dominated board (Anderson & Reeb, 2003). When a company looks for entering the export markets, external professional advisors play a useful role providing advice and counsel, identifying opportunities in foreign markets and bringing knowledge to the principal founder which is not always available from inside directors (Westhead, Wright, & Ucbasaran, 2001).

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The paper is based on a sample of FF in Spain, a country where ownership concentration is prevalent and the presence of FF is the natural type of companies. That is, in Spain, family businesses imply 90% of the total business, representing 60% of the Gross Domestic Product (GDP) and 66% of private sector employment (Instituto de la Empresa Familiar, 2015) which justifies the interest of this study.

The sample is based on two data sources. First, the population and financial and accounting information comes from the SABI (Sistema de Análisis de Balances Ibéricos) provided by Bureau Van Dyck Electronic Publishing database. This database comprises of 1,320,000 Spanish and Portuguese companies, although we have just considered the Spanish context. SABI contains data from the financial statements included in the Spanish Companies Registration Office. The target population was composed by 5.113 non-listed firms between 25 and 249 employees from the manufacturing sector in Spain. We gathered information from a random sample of 500 firms. In particular, the industry sample distribution includes the following companies: food (93), textile and clothing (39), chemical (87); wood (41), metallurgical (92), electrical (30), automotive (51) and others (67). This sample size is selected using a stratified system yielding a sampling error of $\varepsilon = \pm 4.25\%$, considering a sampling framework of 5113 companies and assuming simple random sampling criteria, for the case of maximum uncertainty [P = q = 50%] and a confidence level of 95.5% (k = 2). From the total sample of 500 firms, 187 observations are considered FF according to the above definition.

Second, we focus our research just on FF' subsample. In particular, firm and family specific characteristics are obtained from a survey dataset carried out in 2011, during February and March. The questionnaire was answered by the chief executive officer (CEO) as his/her position guarantees in-depth knowledge of the policies studied in the survey. The survey on FF uses a CATI NET system to collect information. The survey includes information about the general characteristics of the companies such as average number of employees, sector to which the company belongs, its propensity to export to international markets, generation of the family members that controls the company, percentage of family members on board, location, some internationalization considerations (degree of conservatism, availability of financial resources) and CEO demographic characteristics (gender and level of education). Besides, through the financial information gathered from SABI, we have calculated the return on assets (ROA), the financial autonomy (FA) of each company, the size, the capacity for generating resources of each FF and the degree of internationalization (INT). See Table 1.

3.2. Dependent variables

The dependent variable, internationalization (INT), shows the firm's intensity of internationalization, variable which has been examined in previous research in different ways. However, to proxy this variable, we use the most common measure based on Sullivan (1994) who determine it as a continuous variable calculating the proportion of foreign sales to total sales.

3.3. Independent variables

Based on previous research (see Barroso et al., 2011), we define education (EDU) as the maximum academic level reached by the CEO, a variable categorized into two groups taking the value 1 if the CEO has a bachelor's degree course and 0 if he has primary and/or secondary education level.

GENDER is another important variable defined as independent because it is likely to appear gender differences in export propensity (Orser et al., 2010). We measure it as a dummy variable where men are coded 0 and women 1.

We define the variable CONSERVATIVE by using the information obtained in the survey and create a three-item variable following a five-point Likert-type scale (5 = very conservative vs 1 = not conservative). The items considered evaluate the degree of conservatism of the firm regarding its market, product and/or service and technology. The items are: 1) national market offers more opportunities for growth; 2) the products/services are national consumer oriented; 3) the technology level of the company is not sufficiently developed to compete in international markets.

RESOURCE_GENERATION_CAPACITY measures the internal capacity of the firm for generating financial resources. It is measured by the ratio of the earnings before interest and taxes to fixed assets in 2010. FAMILY_BOARD_MEMBERS indicates the percentage of family members serving as board members.

3.4. Control variables

Following prior literature (see Singla, Veliyath, & George, 2014), we control for a number of factors that can potentially affect internationalization and to ensure the validity of the relation between our variables. Firm SIZE is the logarithm of total assets of the company in 2010, and it is a proxy of the resources available to the firm for processes of internationalization. As it is mentioned in previous literature, the predicted sign of this variable is positive owing to the fact that big companies should have more resources,

Table 1
Variable Definition.

Variables	Description
INTERNATIONALIZATION (INT)	Proportion of the company sales exported in 2010, calculated as the proportion of foreign sales to total sales
EDUCATION (EDU)	Dummy variable that equals 1 if the level of academic achievement of the CEO is university level and 0 if primary and/or secondary education level
GENDER	Dummy variable that equals 1 if the CEO is a woman, and zero otherwise
CONSERVATIVE	It is a three-item variable following a five-point Likert-type scale (5 = very conservative vs 1 = not conservative) representative of the degree of conservatism of the firm regarding its market, product/service and technology.
RESOURCE_GENERATION_CAPACITY	It is a measure of the capacity for generating resources which is represented by the ratio of the earnings before interest and taxes to fixed assets in 2010.
FAMILY_BOARD_MEMBERS	It is measured as the percentage of family members serving as board members.
SIZE	Total assets (log) in 2010
FINANCIAL AUTONOMY (FA)	Financial autonomy ratio is calculated as the proportion of total shareholders' equity to total assets of the firm in 2010. It shows the ability of a company to be funded by external funds (debt)
SECTOR	Dummy variable that equals 1 if the firm allows to high technology sector, and zero otherwise
RETURN ON ASSETS (ROA)	Return on equity ratio is calculated as the proportion of operate income before interest and taxes divided by the total assets in 2010. It shows how the firm is able to generate earnings with its available assets
LOCATION	Dummy variable that equals 1 if the company is located in the north of Spain and 0 if it is in the south
GENERATION	Dummy variable that equals 1 if the founder generation controls the ownership of the company and 0 otherwise

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allowing them to better face the internationalization opportunities (Cerrato & Piva, 2012; Zahra, Neubaum & Naldi, 2007). However, some studies show that small size needs not to be a barrier to exports because in spite of having fewer resources, they can enter foreign markets and achieve a high level of exports (Bonaccorsi, 1992; Calof, 1993).

Financial autonomy (FA) is another control variable calculated as equity divided by total assets in 2010. The return on assets (ROA) is defined as the company's operate income before interest and taxes over its total assets. We also include the SECTOR the firm operates in. This control variable is coded as a dummy variable. The two values are whether the company belongs to a high technology sector or not. The distinction between firms that operate in the high technology sector versus those operating in lower ones is prevalent among internationalization research (Manolova, Brush, Edelman, & Greene, 2002). The geographical location of the company (LOCATION) is included as a dummy variable that equals 1 if the company is located in the north of Spain and 0 if it is in the south. Both areas present different characteristics. Provinces located in the north of Spain are richer in terms of GDP per capita with a high concentration of industrial and technological companies than those located in the south, which present lower GDP per capita values with productive sectors based on the primary activities and lower productivity values (Maté, García, & López, 2009). The generation controlling the business (GENERATION) is also included as a control variable. It is a dummy variable that takes the value 1 if the founder generation (first generation) controls the ownership of the company and 0 otherwise. Previous literature suggests that succession to the next generation can affect the internationalization process in a positive (Okoroafo, 1999) or negative (Fernández & Nieto, 2005; Menéndez-Requejo, 2005) way. While Okoroafo (1999) find that the internationalization decreases with new generations, Fernández and Nieto (2005) and Menéndez-Requejo (2005) argue that the internationalization process is enhanced when the company is controlled by the second generation.

Consequently, the model of the relationships between the internalization of FF and the variables explained above takes the following form:

$$INT = \beta_0 + \beta_1\ EDU + \beta_2\ GENDER + \beta_3\ CONSERVATIVE + \beta_4\ RESOURCE\_GENERATION\_CAPACITY + \beta_5\ FAMILY\_BOARD\_MEMBERS + \beta_6\ SIZE + \beta_7\ FA + \beta_8\ ROA + \beta_9\ SECTOR + \beta_{10}\ LOCATION + \beta_{11}\ GENERATION + \varepsilon$$

4. Results

4.1. Descriptive statistics

Table 2(panel A) presents the mean value, the median, the standard error, and the maximum and minimum value of the main variables. The results show that the mean proportion of the company sales exported is 20.011%; the mean size of the companies is 15.612 in million euros; the FA mean is 0.432 and the ROA is 0.024. The CONSERVATIVE presents a mean of 7.481%; The RESOURCE_GENERATION_CAPACITY and the FAMILY_BOARD_-MEMBERS have a mean of 2.283 and 1.716 respectively.

Table 2(panel B) shows that 43.850% of CEOs in our sample have their elementary and/or high school years while 56.150% of them have a bachelor degree. The 90.910% of the sample is formed by men whereas just 9.090% are women. The table also shows that

Table 2
Main Descriptive Statistics.

a) Continuous variables

Panel A

Variable	N	Mean (%)	Median	Std. Dev. (%)	Minimum values	Maximum values
Dependent variable						
INT	178	20.011	5	26.936	0	95
		Do not export	**%**	**Export**	**%**	
		64	35.95	114	64.05	
Independent variables						
SIZE	172	15.612	15.460	1.129	11.882	18.849
FA	168	0.432	0.393	0.228	0.007	0.978
ROA	172	0.024	0.024	0.113	−0.552	0.484
CONSERVATIVE	187	7.481	7	3.357	0	15
RESOURCE_GENERATION_CAPACITY	179	2.283	0.16	0.570	−2.96	3.02
FAMILY_BOARD_MEMBERS	114	1.716	100	22.874	0	100

b) Dummies variables

Panel B

	0	% (0)	1	% (1)
EDU	82	43.850	105	56.150
GENDER	170	90.910	17	9.090
SECTOR	76	40.642	111	59.358
LOCATION	138	74.595	47	25.405
GENERATION	97	51.872	90	48.128

Mean, median, standard deviation, and minimum and maximum values of the main variables. Panel A and B show the continuous and dummy variables, respectively. INT is the proportion of the company sales exported in 2010; EDU is the CEO level of academic achievement. It equals 1 if the level of academic achievement of the CEO is university level and 0 if primary and/or secondary education level; GENDER equals 1 if the CEO of the company is a woman; CONSERVATIVE is a three-item variable following a five-point Likert-type scale (5 = very conservative vs 1 = not conservative), representative of the degree of conservatism of the firm regarding its market, product/service and technology; RESOURCE_GENERATION_CAPACITY is a measure of the capacity for generating resources of the firm which is represented by the ratio of the earnings before interest and taxes to fixed assets in 2010; FAMILY_BOARD_MEMBERS is measured as the percentage of family members serving as board members; SIZE is the total assets in million Euros in 2010; FA is a ratio calculated as the proportion of total shareholders' equity to total assets of the firm in 2010. It shows the ability of a company to be funded by external funds (debt); SECTOR is a dummy variable that equals 1 if the firm allows to high technology sector; and ROA is the operate income before interests and taxes over total assets in 2010. It shows how the firm is able to generate earnings with its available assets. LOCATION is a dummy variable that equals 1 if the company is located in the north of Spain and 0 if it is in the south. GENERATION equals 1 if the founder generation controls the ownership of the company and 0 otherwise.

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Table 3
Correlations Matrix.

	1	2	3	4	5	6	7	8	9	10	11	12
Panel A: Analysis of pairwise Correlation Coefficients												
1. INT	1											
2. SIZE	.300***	1										
3. FA	−0.073	0.055	1									
4. ROA	0.052	.228***	0.112	1								
5. CONSERVATIVE	−0.275***	−0.141*	0.060	0.075	1							
6. RESOURCE_GENERATION_CAPACITY	0.0139	−0.129*	0.002	.161**	0.120	1						
7. FAMILY_BOARD_MEMBERS	0.039	−0.179*	0.126	−0.013	0.043	0.015	1					
8. EDU	.173**	.183**	0.005	−0.036	−0.140*	−0.055	−0.158*	1				
9. GENDER	0.0219	−0.132*	0.094	−0.072	−0.106	0.078	−0.114	0.092	1			
10. SECTOR	0.086	0.115	.154**	0.110	−0.108	0.055	−0.112	−0.007	0.034	1		
11. LOCATION	0.020	0.047	−0.009	−0.055	0.065	0.049	−0.000	−0.0106	−0.056	−0.074	1	
12. GENERATION	0.042	0.025	0.075	−0.051	−0.090	−0.074	−0.122	0.074	0.030	−0.139*	0.109	1
Panel B: Multicollinearity Diagnostics using Variance Inflation Factor (VIF)												
VIF		1.24	1.18	1.15	1.18	1.27	1.12	1.13	1.10	1.07	1.13	1.16

Pearson's correlation matrix. INT is the proportion of the company sales exported in 2010; CONSERVATIVE is a three-item variable following a five-point Likert-type scale (5 = very conservative vs 1 = not conservative), representative of the degree of conservatism of the firm regarding its market, product/service and technology; RESOURCE_GENERATION_CAPACITY is a measure of the capacity for generating resources of the firm which is represented by the ratio of the earnings before interest and taxes to fixed assets in 2010; FAMILY_BOARD_MEMBERS is measured as the percentage of family members serving as board members; SIZE is the log of total assets in 2010; FA is a ratio calculated as the proportion of total shareholders' equity to total assets of the firm in 2010. It shows the ability of a company to be funded by external funds (debt); and ROA is the operate income before interests and taxes over total assets in 2010. It shows how the firm is able to generate earnings with its available assets. Assets were transformed in logarithm in order to avoid heteroscedasticity. LOCATION is a dummy variable that equals 1 if the company is located in the north of Spain and 0 if it is in the south. GENERATION equals 1 if the founder generation controls the ownership of the company and 0 otherwise. EDU is the CEO level of academic achievement. It equals 1 if the level of academic achievement of the CEO is university level and 0 if primary and/or secondary education level; GENDER equals 1 if the CEO of the company is a woman; SECTOR is a dummy variable that equals 1 if the firm allows to high technology sector. Variance Inflation Factor (VIF). *** Significant at 1%, ** at 5% and * at 10%.

59.358% of the companies allow to a sector considered as high technology. Finally, the 74.595% of the companies are located in the south of the country and the 51.872% are founder controlled.

Table 3 presents the Pearson correlation matrix to test for multicollinearity. The correlation between the pairs is low and not significant. None of the correlation coefficients is high enough (>0.80), so according to these results, we conclude that the models are free of multicollinearity problems. As a supplement to the information provided, the Variance Inflation Factor (VIF) test is applied. We notice that all VIFs are strictly less than 2, indicating that the results are not biased due to multicollinearity.

4.2. Univariate results

For an exploratory analysis, we divide the sample into two groups depending on the level of education and gender of the CEO as well as the resource generation capacity, the level of firm conservative approach towards internationalization and the family members on board (under and over the median). Then, we conduct a test of means comparison to explore whether firm internationalization is different between the different groups. Table 4 reports the results. Although not conclusive, the findings suggest that, effectively, our hypothesis H1 is supported, there are significant differences between CEOs with a high academic level and those who have a lower one. The same goes for hypothesis H3 which supports the idea that more conservative families, those over the median, are less likely to internationalize.

Table 4
Means Test.

	INT		
	0	1	*p*-value
EDU	14.925	24.257	0.020
GENDER	19.819	21.823	0.771
CONSERVATIVE	28.291	14.386	0.000
RESOURCE_GENERATION_CAPACITY	20.270	20.576	0.941
FAMILY_BOARD_MEMBERS	21.531	22.362	0.884

This table provides the values firm internationalization (INT) (%) according to the GENDER (0 = male/1 = female), EDU (0 = low/1 = high level of studies), CONSERVATIVE (0 = under/1 = over the median), RESOURCE_GENERATION_CAPACITY (0 = under/1 = over the median), FAMILY_BOARD_MEMBERS (0 = under/1 = over the median); *p*-value is the significance level to accept the null hypothesis of equality of means between groups.

4.3. Regression results

It is obvious that our dependent variable (internationalization measured as the proportion of the company sales exported) consists of many FF that do not export at all. It is the reason why this variable (INT) takes the value of zero for non-exporter FF, and positive values for the exporters. Consequently, the most appropriate way of obtaining unbiased and consistent estimators is the Tobit estimation procedure (Özçelik & Taymaz, 2004) due to the Tobit technique enables us to address particular consideration to the extreme scores.

To explore the effects of our independent variables in the internalization process we run the analyses in three steps or models. Table 5 provides our main results of the Tobit regression. In spite of the fact that the Pseudo-R^2 values look small, the LR test rejects the null hypothesis that the regressors are jointly non-significant, supporting the goodness of the models.

In order to test the Hypothesis 1, model 1 presents our first independent variable, the level of the CEO education. The model shows that this factor exercises a positive and a significant effect on internationalization. This result indicates that the probability of internationalization increases with the level of academic achievement of CEO ($p < 0.10$). Consequently, if the CEO is highly educated, he is more likely to participate in the international strategies of the firm because there is a positive relationship between higher levels of CEO education and the development of abilities that support his decision-making process in an international context. Accordingly, and in line with previous research (Barroso et al., 2011; Cavusgil & Naor, 1987; Hsu et al., 2013; Simpson & Kujawa, 1974), we can accept our Hypothesis 1 and conclude that the higher formal education level of executives in FF, the higher the ability towards internationalization.

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Table 5
Results of the Tobit Regression Analysis.

	Model 1	Model 2	Model 3	Model 4	Model 5	VIF
EDU	10.469*					1.13
	(6.074)					
GENDER		11.797				1.10
		(9.816)				
CONSERVATIVE			−3.340***			1.18
			(.964)			
RESOURCE_GENERATION_CAPACITY				14.396*		1.27
				(5.520)		
FAMILY_BOARD_MEMBERS					0.127	1.12
					(.166)	
SIZE	10.052***	11.154***	9.674***	11.994***	11.580***	1.24
	(2.934)	(2.902)	(2.835)	(3.087)	(3.818)	
FA	−14.186	−15.311	−9.557	−23.822	−17.665	1.18
	(13.394)	(13.534)	(13.265)	(14.787)	(15.448)	
ROA	−7.304	−7.347	−5.522	−4.356	−13.659	1.15
	(29.103)	(29.369)	(28.492)	(29.987)	(32.795)	
SECTOR	7.901	7.598	6.066	7.587	3.383	1.07
	(6.272)	(6.332)	(6.180)	(6.564)	(7.304)	
LOCATION	1.698	1.932	4.286	1.167	−1.208	1.13
	(6.898)	(6.946)	(6.805)	(7.398)	(8.077)	
GENERATION	3.338	3.032	0.144	5.274	0.701	1.16
	(46.613)	(6.154)	(6.058)	(6.458)	(7.217)	
_CONS	−154.798***	−166.597***	−115.635**	−182.064***	−173.602***	
	(46.613)	(46.488)	(46.855)	(49.863)	(65.358)	
Sigma	35.092	35.356	35.268	35.832	33.406	
	(2.649)	(2.670)	(2.576)	(2.797)	(3.094)	
Number of observation	159	159	159	152	101	
Log Likelihood	−548.618	−549.377	−544.025	−518.754	−358.387	
LR X^2	20.34***	18.82***	29.53***	22.11***	12.51*	
Pseudo R^2	0.018	0.016	0.026	0.020	0.017	

Estimated coefficients (std. error). INT is the dependent variable, measured as the proportion of the company sales exported in 2010; EDU is the CEO level of academic achievement. It equals 1 if the level of academic achievement of the CEO is university level and 0 if primary and/or secondary education level; GENDER equals 1 if the CEO of the company is a woman; CONSERVATIVE is a three-item variable following a five-point Likert-type scale (5 = very conservative vs 1 = not conservative), representative of the degree of conservatism of the firm regarding its market, product/service and technology; RESOURCE_GENERATION_CAPACITY is a measure of the capacity for generating resources of the firm which is represented by the ratio of the earnings before interest and taxes to fixed assets in 2010; FAMILY_BOARD_MEMBERS is measured as the percentage of family members serving as board members; SIZE is the log of total assets in 2010; FA is a ratio calculated as the proportion of total shareholders' equity to total assets of the firm in 2010. It shows the ability of a company to be funded by external funds (debt); SECTOR is a dummy variable that equals 1 if the firm allows to high technology sector; and ROA is calculated as the operate income before interests and taxes over total assets in 2010. It shows how the firm is able to generate earnings with its available assets. The standard errors are in brackets. Assets were transformed in logarithm in order to avoid heteroskedasticity. LOCATION is a dummy variable that equals 1 if the company is located in the north of Spain and 0 if it is in the south. GENERATION equals 1 if the founder generation controls the ownership of the company and 0 otherwise. Variance Inflation Factor (VIF). *** Significant at 1%, ** at 5% and * at 10%.

As shown, model 2 seeks to provide support to the Hypothesis 2, including the gender variable, which neither is statistically significant nor presents the expected sign ($p > 0.10$). Consequently, we cannot accept Hypothesis 2, so FF run by female-owners do not necessarily have less probability to go out to international markets.

Hypothesis 3 is tested in Model 3, which includes the conservative attitude of the family business (Gallo & Sveen, 1991). The results agree with our predictions, presenting the negative expected sign which is statistically significant ($p < 0.01$). As a result, the Hypothesis 3 can be accepted, and we conclude that a higher degree of conservatism results in a higher difficulty to change its lines of product/service or markets (Miller et al., 2003) and, consequently, a lower probability to export to international markets.

Model 4 shows that the family firm's capacity for generating resources is statistically significant ($p < 0.10$) which permit us to verify Hypothesis 4. The higher the capacity to generate financial resources translates into a higher probability of selling abroad.

Finally, we do not find evidence in favor of Hypothesis 5 (model 5). The percentage of family members serving as board members has no significant effect in the propensity to export.

The size of the company also has a positive and highly significant effect upon international diversification, as expected, showing that larger firm size implies a significantly higher export propensity.

4.4. Robustness checks

Several additional analyses are conducted as robustness tests. On the one hand, in order to reduce concerns about unobserved heterogeneity and provide additional confidence in our results, we test the existence of reverse causality between internationalization of FF and CEO education.

First, we look for an alternative measure of CEO education which allows us to obtain empirical results consistent with our finding reported previously. The survey we are working on collects information about the training policies carried out by each company, describing the importance of investing in education policies and the hiring of employees according to specific skills. In that line, previous literature shows that employee training allows the firm to grow, to develop capabilities, to have lower employee turnover, to increase profitability (Chandler & McEvoy, 2000) and enhance the survival rate (Ibrahim & Ellis, 2003). The variables making up this policies are measured using a five-point scale

[2] 0.623 is the maximum correlation coefficient among them.

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(1 = little important; 5 = very important).[2]

Following Cerrato and Piva (2012) we base the analysis on a two-step approach following the Heckman model, which corrects the bias from nonrandom samples. In this two-step procedure, the first step is the estimation of a logit regression that predicts the new variables for measuring the CEO education, and the second-stage regression uses estimates from the first stage in order to provide consistent estimates of the parameters. The exogenous variables selected in our logit model are "stringent selection processes in the family firm (SSelectionProcess)", "recruit people with specific skills (SpecificSkills)", "knowledge and information sharing culture among family members (SharingKnowledge)" and "TrainingExpenses" variable which measures the personnel expenses per employee. Personnel expenses is an accounting item that includes the training expenses incurred by the firm. The first three variables have been obtained from the survey; the ratio has been calculated according the accounting information coming from SABI database. It may be expected that having more educated CEOs involves stricter selection criteria in the selection process, a greater capacity for transmitting knowledge among the members and a greater investment in training the staff.

Based on this argument INT is modeled as the following system of equations:

$$EDU = \beta_0 + \beta_1\, SSelectionProcess + \beta_2\, SpecificSkills + \beta_3\, SharingKnowledge + \beta_4\, Training\ Expenses + \varepsilon \quad (1)$$

$$INT = \beta_0 + \beta_1\, Fitted\,(EDU) + \beta_2\, GENDER + \beta_3\, CONSERVATIVE + \beta_4\, RESOURCE\_GENERATION\_CAPACITY + \beta_5\, FAMILY\_BOARD\_MEMBERS + \beta_6\, SIZE + \beta_7\, FA + \beta_8\, ROA + \beta_9\, SECTOR + \beta_{10}\, LOCATION + \beta_{11}\, GENERATION + \varepsilon \quad (2)$$

where EDU is a dummy variable showing the academic achievement of the CEO and taking a value of 1 if it is university level and 0 if primary and/or secondary education level; SSelectionProcess is a five-item variable (5 = very important vs 1 = not important), where one means that for the company it is not very useful to carry out a stringent selection process (see Klein, 2007); Likewise, SpecificSkills is also measured as a five-item variable (5 = very important vs 1 = not important) showing the importance of recruiting employees with specific skills required for the position (Hiebl, 2014). SharingKnowledge is a five-item variable (5 = very important vs 1 = not important) indicating the importance of having a knowledge and information sharing culture among family members. In FF, knowledge is defined as the skills that family members have acquired and gained through education and experience inside and outside the company (Cabrera-Suárez, Saá-Pérez, & García-Almeida, 2001; Chirico & Salvato, 2008; Kellermanns, Eddleston, Barnett, & Pearson, 2008). It is an important issue for family companys due to the fact that new generations have to take over the business from the previous one (Cabrera-Suárez et al., 2001; Kellermanns et al., 2008). TrainingExpenses is a continuous variable calculated by dividing the personnel expenses that the company incurs in 2010 by the number of employees in the same year.

In model 2, INT is the degree of internationalization, measured as the proportion of the company sales exported in 2010; GENDER is a dummy variable that takes a value of 1 if the CEO is a woman and 0 if it is a man; CONSERVATIVE is a three-item variable representative of the degree of conservatism of the firm regarding its market, product/service and technology; RESOURCE_GENERATION_CAPACITY is a measure of the capacity for generating resources of the firm which is represented by the ratio of the earnings before interest and taxes to fixed assets in 2010; FAMILY_BOARD_MEMBERS is measured as the percentage of family members serving as board members; SIZE is the logarithm of total assets; FA is the financial autonomy ratio and it shows the ability of a company to be funded by external funds (debt); SECTOR is a dummy variable that equals 1 if the firm allows to high technology sector, and 0 otherwise; ROA is the return on equity ratio and it indicate how the firm is able to generate earnings with its available assets; LOCATION is a dummy variable that equals 1 if the company is located in the north of Spain and 0 if it is located in the south; GENERATION equals 1 if the founder generation controls the ownership of the company and 0 otherwise.

Fitted (EDU) is the predicted value produced in the first step, which measures the CEO education. ε is the error term.

Model 1 of Table 6 shows the results of the first-stage regression. The variables representing education level are subsequently replaced in Eq. (2) to explain their influence in internationalization.

The results of model 2 in Table 6 show that the variables substituting EDU are statistically significant. Moreover, the GENDER variable becomes significant noting that FF having a female CEO show a higher propensity to internationalize. This

Table 6
Heckman selection model: two stage-estimates.

Variable	EDU (1)	S.E.	INT (2)	S.E.
SSelectionProcess	.528***	0.197		
SpecificSkills	0.005	0.223		
SharingKnowledge	.305**	0.155		
TrainingExpenses	−1.94e-06	2.61e-06		
Fitted (EDU)			−1.296***	0.333
CONSERVATIVE			−0.188***	0.054
SIZE			.537**	0.211
RESOURCE_GENERATION_CAPACITY			.896**	0.367
FAMILY_BOARD_MEMBERS			−0.002	0.007
FA			0.182	0.753
ROA			−4.088**	2.024
GENDER			1.266*	0.742
SECTOR			0.195	0.323
LOCATION			0.259	0.397
GENERATION			−0.015	0.335
_CONS	−3.009***	1.010	−5.796*	3.325
N	172		96	
Chi2	18.01***		15.16***	
Pseudo R2	0.076			
Lambda Mills			−0.002	0.146

EDU is a dummy variable that takes a value of one if the level of academic achievement of the CEO is university level and 0 if primary and/or secondary education level; SSelectionProcess is a five-item variable (5 = very important vs 1 = not important), where one means that for the company it is not very useful to carry out a stringent selection process; SpecificSkills is also measured as a five-item variable (5 = very important vs 1 = not important) showing the importance of recruiting employees with specific skills required for the position; SharingKnowledge is a five-item variable (5 = very important vs 1 = not important) indicating the importance of having a knowledge and information sharing culture among family members; TrainingExpenses is a continuous variable calculated by dividing the personnel expenses that the company incurs in 2010 by the number of employees in the same year. In model 2, INT is the degree of internationalization, measured as the proportion of the company sales exported in 2010; GENDER is a dummy variable that takes a value of one if the CEO is a woman and zero if it is a man; CONSERVATIVE is a three-item variable following a five-point Likert-type scale (5 = very conservative vs 1 = not conservative), representative of the degree of conservatism of the firm regarding its market, product/service and technology; RESOURCE_GENERATION_CAPACITY is a measure of the capacity for generating resources of the firm which is represented by the ratio of the earnings before interest and taxes to fixed assets in 2010; FAMILY_BOARD_MEMBERS is measured as the percentage of family members serving as board members. SIZE is the logarithm of total assets; FA is the financial autonomy ratio and it shows the ability of a company to be funded by external funds (debt); SECTOR is a dummy variable that equals 1 if the firm allows to high technology sector, and zero otherwise; ROA is the return on equity ratio and it indicate how the firm is able to generate earnings with its available assets; LOCATION is a dummy variable that equals 1 if the company is located in the north of Spain and 0 if it is in the south. GENERATION equals 1 if the founder generation controls the ownership of the company and 0 otherwise. Fitted (EDU) indicates predicted value produced by Eq. (1); ε is the error term.
S.E. shows the standard errors. *** Significant at 1%, ** at 5% and * at 10% levels.

would be contrary to our previous expectations, where we assume that the higher risk aversion of female would lead to a lower level of exportation figures in those FF with a CEO female. The results are supported by those authors that consider that gender diversity increases firm's competitive advantage due to female promote a better understanding of the market place (Robinson & Dechant, 1997) and a better image of the firm through a positive effect on customer behaviours (Smith, Smith, & Verner, 2006). These female attributes could explain the positive effect of female CEO on family firm internationalization.

In addition, the results suggest that after controlling for endogeneity, internationalization is still influenced by the level of CEO education confirming that the probability of internationalization increases with the level of academic achievement of CEO in FF. Similarly to results showed in Table 5, a higher degree of conservatism and a greater capacity for generating financial resources imply a lower probability to export to international markets by FF.

In addition to the foregoing, we apply some robustness tests in order to assess the validity of our results. Based on previous literature (Anderson & Reeb, 2003; Amore, Minichilli, & Corbetta, 2011; Barth, Gulbrandsen, & Schønea, 2005), we use an alternative definition of family firm. We consider now a business as a family firm when the family holds at least 50% of the capital ownership, which is considered necessary to achieve control. As shown in Table 7, the results are unchanged with this alternative measure.

Finally, as it is quantified in previous research, in spite of the fact that firm-level internationalization can be defined by using different measures (Sullivan, 1994), by means of a combination of measures it is possible to enhance the accuracy of the assessment (Cerrato & Piva, 2012). Consequently, in order to test the robustness of the results and overcome the limitation caused by using a single measure, we examine whether the prior results are sensitive to alternate measurements, re-estimating previous analysis by using an alternate proxy for internationalization intensity. Now, it is measured by the foreign sales over total assets ratio (Kotabe, Srinivasan, & Aulakh, 2002). The results, not provided for the sake of brevity, are similar with earlier analysis indicating that our primary findings are consistent across different internationalization definition.

5. Discussion

Through an empirical investigation of Spanish FF, this paper contributes to the literature about the impact of CEO and family firm characteristics in their decision processes towards internationalization. Most internationalization research focuses on studying the degree of internationalization of family business and the factors which facilitate or restrain the process. However, the association between some family attributes and export sales is scarce and most of the literature is based on large listed firms.

Table 7
Results of the Tobit Regression Analysis when family the family holds at least 50% of the capital ownership.

	Model 1	Model 2	Model 3	Model 4	Model 5	VIF
EDU	12.244**					1.12
	(5.124)					
GENDER		10.740				1.08
		(8.596)				
CONSERVATIVE			−3.103***			1.28
			(.784)			
RESOURCE_GENERATION_CAPACITY				1.396		1.14
				(2.048)		
FAMILY_BOARD_MEMBERS					0.139	1.18
					(.102)	
SIZE	10.058***	11.667***	10.582***	11.654***	12.008***	1.16
	(2.222)	(2.185)	(2.125)	(2.261)	(2.782)	
FA	0.019	0.112	2.553	1.254	−2.854	1.05
	(10.280)	(10.441)	(10.134)	(10.899)	(12.034)	
ROA	3.346	3.066	5.191	2.807	17.028	1.08
	(23.978)	(24.396)	(23.604)	(24.801)	(27.777)	
SECTOR	7.887	7.449	6.344	7.997	7.258	1.04
	(4.956)	(5.033)	(4.896)	(5.228)	(5.816)	
LOCATION	4.738	4.535	6.163	4.570	4.802	1.05
	(5.320)	(5.379)	(5.256)	(5.640)	(6.255)	
GENERATION	−1.608	−1.235	−2.977	−1.598	−7.500	1.10
	(4.842)	(4.901)	(4.792)	(5.071)	(5.826)	
_CONS	−156.567***	−175.585***	−132.824***	−175.048***	−180.580***	
	(35.283)	(35.229)	(35.308)	(36.573)	(47.767)	
Sigma	33.530	33.956	32.937	34.537	32.845	
	(2.028)	(2.056)	(1.986)	(2.147)	(2.383)	
Number of observation	225	225	225	217	149	
Log Likelihood	−811.418	−813.477	−806.428	−781.089	−556.948	
LR X^2	37.17***	33.05***	47.15***	30.48***	22.68***	
Pseudo R^2	0.022	0.019	0.028	0.019	0.020	

Estimated coefficients (std. error). INT is the dependent variable, measured as the proportion of the company sales exported in 2010; EDU is the CEO level of academic achievement. It equals 1 if the level of academic achievement of the CEO is university level and 0 if primary and/or secondary education level; GENDER equals 1 if the CEO of the company is a woman; CONSERVATIVE is a three-item variable following a five-point Likert-type scale (5 = very conservative vs 1 = not conservative), representative of the degree of conservatism of the firm regarding its market, product/service and technology; RESOURCE_GENERATION_CAPACITY is a measure of the capacity for generating resources of the firm which is represented by the ratio of the earnings before interest and taxes to fixed assets in 2010; FAMILY_BOARD_MEMBERS is measured as the percentage of family members serving as board members; SIZE is the log of total assets in 2010; FA is a ratio calculated as the proportion of total shareholders' equity to total assets of the firm in 2010. It shows the ability of a company to be funded by external funds (debt); SECTOR is a dummy variable that equals 1 if the firm allows to high technology sector; and ROA is calculated as the operate income before interests and taxes over total assets in 2010. It shows how the firm is able to generate earnings with its available assets. The standard errors are in brackets. Assets were transformed in logarithm in order to avoid heteroskedasticity. LOCATION is a dummy variable that equals 1 if the company is located in the north of Spain and 0 if it is in the south. GENERATION equals 1 if the founder generation controls the ownership of the company and 0 otherwise. Variance Inflation Factor (VIF). *** Significant at 1%, ** at 5% and * at 10%.

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We argue that a firm's decision of international diversification is influenced not only by specific CEO characteristics, such as the level of education achievement and CEO gender, but also by the extent to which the family is present on the board and the capacity of generating the financial resources necessary to carry out an international strategy.

Specifically, our findings on the influence of the level of CEO education on internationalization (Hypothesis 1) are broadly consistent with those reported in previous studies (Barroso et al., 2011; Basly, 2007; Cavusgil & Naor, 1987; Gallo & García Pont, 1996; Graves & Thomas, 2008; Hsu et al., 2013; Simpson & Kujawa, 1974). It is widely accepted that the access to international markets requires dealing with new information in different international environments that CEOs are used to, so that better educational levels allow FF to function effectively in these contexts. Therefore, strengthening the family firm with greater professionalization of their CEOs seems critical to increase the capability to grow in foreign markets. This result provides a relevant implication for FF who are reluctant to hire nonfamily members, noting that opening the management positions to qualified CEOs increase the level of family firm internationalization.

Our results also show that CEO gender does not significantly predict the propensity to export (Hypothesis 2). This result is opposed to the study of Orser et al. (2010) who showed that women have a lower tendency to financial and investment risk than men and, then, lower propensity towards internationalization. However, Cavusgil and Naor (1987) and Manolova, Brush, and Edelman (2008) in their research found similar results to ours. They find that gender, among other demographic factors, do not affect the internationalization of the firm. It is important to highlight that the gender is still unexplored in FF and it is measured in less than 10% of the empirical studies (Le Breton, Miller, & Steier, 2004). Nevertheless, gender diversity studies in FF are necessary due to women in family enterprises are more constrained by traditional female roles than women who do not work with their families (Bianco, Ciavarella, & Signoretti, 2015). Therefore, a focus on family firm and their gender diversity is essential to improve governance recommendations and better define and tailor these recommendations to this specific type of firm.

Results also find that the degree of conservatism and traditionalism of family members affects negatively to their level of foreign sales (Hypothesis 3). This family attitude can be explained by the specific market, product/service and technology characteristics which are very hard to change when the family's culture is deeply embedded into their business strategies, policies, and practices. Family firms are traditional and conservative and they are characterized by the power and persistence of first generations that play the supervision role (Basly, 2007). These results are in line with those obtained by Cerrato and Piva (2012) and Mitter, Duller, Feldbauer-Durstmüller, and Kraus (2014), who showed that industry characteristics do matter in internationalization processes.

According to some previous research (Hitt et al., 2006), our evidence indicates that the capacity of generating financial resources does significantly predict the propensity to venture outside the home market (Hypothesis 4). FF are often reluctant to accept external financing because it could deteriorate the independence of the firm, so they seems reluctant to adopt modes of financing other than internal ones by the retention of earnings and the constitution of reserves. Therefore, the amount of financial resources a firm has available would improve the opportunities to expand into foreign markets.

Finally, in spite of the fact that findings regarding this issue are mixed (Pukall & Calabrò, 2013), our results do not support the influence of family board representation on firm internationalization (Hypothesis 5).

Our findings are robust to alternative measures of internationalization and family firm and we control for endogeneity.

This research makes several important contributions to the literature. First, it covers an important research gap in the literature due to the fact that although internationalization strategies of large firms have been studied in depth in previous literature, few studies focus solely on the specific case of non-listed family firms (Benito-Hernández, Priede-Bergamini, & López-Cózar-Navarro, 2014) with inconclusive findings (Merino, Monreal-Pérez, & Sánchez-Marin, 2015). Second, this paper provides a picture of factors that drive internationalization in FF by considering aspects such as CEO gender and CEO education. This is essential to improve governance recommendations and better define and tailor those recommendations to this specific type of firm. In addition, it must be considered that gender diversity studies in FF are still fragmentary and scarce (Martinez Jimenez, 2009) so that this paper covers another relevant research gap in the literature. Third, this study confirm that opening up the family business to professional nonfamily CEOs is essential for rising its international development, what constitutes a relevant implication for the family firm strategy. Fourth, this study increases our knowledge of family firm internationalization by suggesting that family attitudes and capabilities for generating financial resources have relevant effects on sales internationalization. Our paper also confirms that concerning internationalization, the advantages of being a family firm are greater when products, markets and technologies are less traditional.

Our insights can be useful for regulators who need to develop programs for supporting sales internationalization in FF. Then, our research provides evidence for regulators and economic agents of the need for greater qualification in FF. The research is also relevant to small and medium-sized enterprises (SMEs) who are under increasing pressure to compete in global markets. Similarly, these findings are interesting to FF who need to understand the CEO abilities and family firm attitudes that may improve their capacity to internationalize their business.

6. Concluding remarks

This study seeks to enhance the understanding of the CEO and company characteristics that influence on the internationalization process of family firms. Based on different theories, we analyze individual variables (e.g., human capital measured through the level of educational achievement), demographic variables (e.g. gender) and family attitudes (degree of conservatism, the percentage of family members sitting on the board and the availability of financial resources). This topic is relevant in Spain, where family firms are predominant. In addition, few studies have analyzed how family characteristics and attributes influence its process of internationalization.

We confirm that the higher the CEO academic level of achievement, the higher level of success in international expansion. Since internationalization requires dealing with new information in different international environments that CEOs are used to, better educational levels allow them to function effectively in each one of these contexts. Additionally, results find that the level of conservatism and traditionalism in products, technology and markets, as well as the capacity of the family firm for generating financial resources, increase the resistance from family members to export.

Contrary to expectations, both the gender variable and the percentage of family members sit on board do not significantly predict the propensity to export.

This study is not free from limitations. It includes some problems in the design and data collection of the survey. Moreover, the measurement of some of the variables can be also considered

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as factors that limit the study, provoking low levels of the R square in our regression models. This study also uses a broad definition of education level, without taking into account the type of academic degree (bachelor, master and above master). Therefore, future research might include a more refined measure about the CEOs studies. The inclusion of CEO background such as past or international experiences may also offer another path for future research. In addition, the data were collected in Spain, which limits the possibility of generalizing our results and opens promising avenues for future international studies.

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