

Determinants of early internationalization of new firms: the case of Chile

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Abstract The aim of this article is to analyze the factors related to the early internationalization of new firms in Chile. We grouped the internationalization driver factors into three categories: individual, organizational, and firm-environmental factors. Using a sample of 374 entrepreneurs from Global Entrepreneurship Monitor data and performing a logistic regression model, we found that owner-manager' high educational levels, opportunity-oriented motivation, new technology use, and activities related to extractive sectors (e.g., farming, forestry, fishing, and mining) contribute to a higher likelihood of early firm internationalizing. The implications for theory and practice are discussed.

Keywords International entrepreneurship · New firm owners · Internationalization of new firms · Global Entrepreneurship Monitor · Chile

Introduction

According to the World Trade Organization (WTO), Chile is the 47th exporter in world merchandise trade (WTO 2013), and its economy has the third highest number of trade

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agreements (total 24) - only lagging behind the European Union and the European Free Trade Association (EFTA). Due to its small internal market (17 million people), Chile has historically developed a strong export orientation. The context of “trade openness” and the growing entrepreneurship ecosystem have made Chile one of the most dynamic economies in terms of new business creation (Xavier et al. 2013), and there are increasing numbers of entrepreneurs who exhibit high levels of international activities (Amorós and Poblete 2013; Felzensztein et al. 2013). However, Chile’s success¹ has been questioned because its export orientation is basically based on exploiting natural resources (Arroyo and Edmunds 2010) and creating an economy that is highly dependent on external conditions, such as the price of commodities. Moreover, the exports that come from exploiting natural resources, such as those from the mining industry, account for 55.6 % of Chile’s total exportations (ProChile 2010) and are mainly produced by a small number of big corporations, thus putting the Chilean economy at risk due to the potential of Dutch disease (The Economist 2010). Small and medium firms only account for 2.7 % of export sales in the Chilean economy (Cancino and la Paz 2010). Therefore, one challenge for the Chilean economy is how to develop a diversified economic structure based on the new entrepreneurial knowledge economy (Audretsch and Thurik 2001; Acs and Amorós 2008).

Empirical evidence shows that the success of small and medium firms’ international activities has social and economic impacts in developing countries (Milesi and Aggio 2008) and that entrepreneurs may be agents for regional development (Verheul et al. 2009). Indeed, according to Acs et al. (2003), entrepreneurs filter a region’s available stock of knowledge and turn it into promising new ventures² and internationalization (Hessels and van Stel 2011). In this sense, the Chilean government has been making significant efforts to increase the competitiveness of small and medium firms through its agencies, such as Corporación de Fomento Productivo (CORFO), the National Agency of Innovation and Entrepreneurship, and ProChile (Instituto de Promoción de Exportaciones/National Exports Institute), which aim at supporting entrepreneurs’ internationalization efforts. In this context, we wonder if small and new firms are able to undergo early internationalization. Therefore, we explore the following research question: what are the determinants that enable new Chilean businesses to go international in the early stages of their existence?

Early and rapid internationalization among new firms has been gaining attention in the fields of international business and entrepreneurship (Knight and Cavusgil 1996; McDougall et al. 1994; Zahra 2005). Although there is some agreement about the factors that could determine and enable entrepreneurs’ early internationalization, there are two main gaps in the existing literature. First, there is a need for a more systematic approach to expand empirical studies (Federico et al. 2009) by gradually incorporating theoretical ideas from other fields to increase international entrepreneurship knowledge and by adding new variables and relationships to better understand international entrepreneurship phenomena. Second, there has been a call to extend empirical research by considering developing economies (Rialp et al. 2005; Kiss et al. 2012) as a context of study. Moreover, international entrepreneurship studies in emergent and competitive

¹ According to Schwab and Sala-i-Martin (2012), Chile is one of the most competitive countries in Latin America.

² In this paper, we will use the terms “new ventures” and “new firms” interchangeably.

economies from Latin America are scarce (Peña-Vinces and Delgado-Márquez 2013; Dimitratos et al. 2014).

In order to address the abovementioned gaps (which are practical as well as theoretical), we follow the existing debate in the international entrepreneurship field (e.g., Peiris et al. 2012) by building a theoretical frame of driving factors that may affect entrepreneurs' early internationalization, focusing our analysis specifically on the Chilean context. We position our arguments at three different levels: the individual level, the organizational level, and the environmental level. Specifically, based on the existing literature, we theoretically argue that entrepreneurs' knowledge and experience, firms' strategic position and the newness of the technology they use, and geographical location and industrial sector may enable young firms to become international upon inception. Therefore, the main objective of this research is to conduct an exploratory analysis to evaluate the potential driving factors contributing to a higher likelihood of early firm internationalizing (Dimitratos and Jones 2005; González et al. 2010) using a sample of 374 Chilean entrepreneurs.

Our exploratory research contributes to literature on international entrepreneurship by addressing calls for extending empirical research on international entrepreneurship beyond developed countries (Federico et al. 2009; Kiss et al. 2012; Zahra and George 2002). In this research, we use the Chilean context for exploring the phenomenon of early internationalization among new firms. Consequently, this article contributes by heeding certain past authors' (e.g. Dimitratos and Jones 2005) suggestion to combine a set of factors (related to the entrepreneur, the organization, and the context) associated with new entrepreneurs' internationalization as well as to validate this set of factors in the Chilean social and economic context. Specifically, we found that owner-manager' high educational levels, opportunity-oriented motivation, new technology use, and activities related to extractive sectors (e.g., farming, forestry, fishing, and mining) contribute to a higher likelihood of early firm internationalizing. Considering that entrepreneurial activity is uneven across the geographical space (Parker 2005; Armington and Acs 2002), this research provides new evidence related to the determinants of firm's early internationalization in developing countries that can help refine a theory of international entrepreneurship. In line with Shane (2009), our research also has practical implications that may help policymakers identify the ideal circumstances under which Chilean entrepreneurs will flourish in their early internationalization endeavors. This is specifically relevant for the Chilean economy, which has to overcome its dependency on natural resources by developing a diversified economic structure based on the new entrepreneurial knowledge economy (Audretsch and Thurik 2001; Acs and Amorós 2008).

The article is organized as follows: In the next section, we present the literature review and the hypotheses. In the third section, we describe our methodological approach, and the fourth section presents the main results. The paper ends with a discussion of the results as well as some implications for theory and practice.

Literature review and hypotheses

International entrepreneurship research gained scholars' attention as they began trying to understand new phenomena that did not fit into traditional conceptual frameworks in

the international business or entrepreneurship fields (Coombs et al. 2009). In the international business field, there are different theoretical models (Zahra and George 2002; Westhead et al. 2001a) to explain firm internationalization (Ruzzier et al. 2006). However, the main goal of research in this field is to understand internationalization based on companies' gradual progressive commitment to obtain foreign markets, which suggests that gaining access to international markets can only be achieved after a period of domestic maturation and growth (Johanson and Vahlne 1977). However, real evidence shows that there are also some businesses that become international upon their inception. Traditional models do not fit this new phenomenon (Oviatt and McDougall 1994) and are incapable of explaining some new ventures' rapid internationalization. This incongruence challenges the ability of traditional international business models to explain, for example, why some small firms start to internationalize early (i.e., from inception), whereas others remain anchored in the domestic market (Andersson et al. 2004). Therefore, the speed or pace of internationalization has become the center of international entrepreneurship research—that is, the early start of firms' international activities (Zucchella et al. 2007). On the other hand, entrepreneurship perspectives ignore the importance of entrepreneurs' ability to operate in international markets as well as the process that firms implicitly or explicitly follow to become international (Keupp and Gassmann 2009).

International entrepreneurship research focuses on describing, understanding, and interpreting the reasons underlying the emergence of firms that internationalize early (Rialp et al. 2005) in order to find different characteristics between international and non-international new ventures (Taylor and Jack 2013). With this aim, international entrepreneurship centers its research problems on different aspects, such as the antecedents, processes, and performance of new venture internationalization (Al-Laham and Souitaris 2008; Kiss et al. 2012). In this context, our research focuses on entrepreneurial internationalization, specifically on a combination of factors (i.e., driving forces) that affect entrepreneurs' early internationalization (Dimitratos and Jones 2005). Using different perspectives, previous studies have investigated what factors (i.e., individual factors (Oviatt and McDougall 2005; Felício et al. 2012; Ruzzier et al. 2006), organizational factors (González et al. 2010), and environmental factors (Lambooy 2010)) lead firms to become international upon inception (Kiss et al. 2012). Therefore, the aim of our research is to extend previous research and to analyze those factors associated with entrepreneurs' early internationalization in the Chilean context.

Individual factors

The importance of entrepreneurs in firm development has long been debated (Zucchella et al. 2007). For instance, the experience, skills, and competencies of the owner-manager (i.e., the main decision maker) represent key factors of business creation, survival, and continuity (Unger et al. 2011; Markham 2000). Consequently, following the entrepreneurial tradition centering on an individual's ability to recognize and exploit an opportunity (Shane and Venkataraman 2000), researchers in the international entrepreneurship field have used lenses coming from different fields to identify variables at the individual level that act as driving forces for early internationalization. The arguments about entrepreneurs' human and relational capital (Federico et al. 2009) lead us

to focus our attention on two main individual characteristics: individuals' motivation to become an entrepreneur and entrepreneurial experience.

Motivation to become an entrepreneur Past research has shown the importance of taking into account the reasons underlying entrepreneurs' desires to create and run firms (Shane et al. 2003; González et al. 2010). Not all owner-managers have the same reasons for becoming entrepreneurs (Reynolds et al. 2005; Dunkelberg et al. 2013), and this is an important factor for distinguishing different types of entrepreneurs. That is, entrepreneurs are not a homogeneous group. Many scholars follow Kirzner's (1979) emphasis on pursuing opportunities as a main determinant for distinguishing an entrepreneur from a non-entrepreneur. Since entrepreneurial opportunities are perceived differently by different members in society based on their own individual circumstances (Shane 2000; Shane and Venkataraman 2000; Kirzner 1973), Christensen et al. (1994) suggested that an individual's motivation to set up a business may be fed by opportunity recognition or by a lack of job alternatives (i.e., necessity).

Because opportunity-based reasons and necessity-based reasons are two main aggregate motivations that lead people to become involved in early-stage entrepreneurial activity (Reynolds et al. 2005), it is possible to extend this reasoning and postulate that these reasons could also play a role in entrepreneurs' intentions to go international. However, we assume that opportunity-based reasons and necessity-based reasons may not equally affect firms' early internationalization.

Opportunity-based entrepreneurial motivation, which is related to individuals attempting to take advantage of new business opportunities (Kirzner 1973; Shane and Venkataraman 2000), is grounded in individuals' desires for independence and/or increased income as compared, for instance, to being an employee. Therefore, we argue that opportunity-based motivations may lead entrepreneurs to more actively search for opportunities in national and international markets. On the other hand, necessity-based entrepreneurial motivation is related to individuals attempting to escape negative situations, such as lacking a suitable role in the work world or being unemployed, because entrepreneurship is the only option for subsistence (Bosma 2008). This type of entrepreneurship could correspond to unproductive entrepreneurial activity (Baumol 1990), and many of these activities are in the "shadows," or in an informal economy. Therefore, necessity-based motivations are likely to lead entrepreneurs to be less engaged in searching for innovative opportunities (Kiss et al. 2012) because necessity entrepreneurs, who are often focused on supporting themselves and their families, do not generally have the "luxury" of thinking about bigger goals (Carsrud and Brännback 2011). Based on this framework, we propose the following:

Hypothesis 1: Those firms owned and managed by entrepreneurs who pursue opportunities have a higher likelihood of early internationalization.

Entrepreneurial experience Entrepreneurs who have previous entrepreneurial experience have some advantages over those who do not (Sapienza et al. 2006). Experience gives entrepreneurs accumulative knowledge, business contacts, and entrepreneurial skills (Federico et al. 2009). Therefore, prior entrepreneurial experience could be

understood as being related to human capital and entrepreneurial social capital (Unger et al. 2011; Kwon and Arenius 2010). In this research, we understand human and entrepreneurial capital in a broad sense; that is, prior business experience may create knowledge based on training by doing and may increase the entrepreneur's ability to discover opportunities and exploit them (Bradley et al. 2012). For instance, regarding human capital, Zucchella et al. (2007) found that in the Italian context, only prior experience in family business has a positive effect on internationalization, whereas other working experience does not. Regarding entrepreneurial social capital, developing personal business contacts is also important as doing so provides the entrepreneur access to information exchange, spillover, and new knowledge. Supporting this argument, Hessels and Terjesen (2008) conducted cross-country analyses and found that entrepreneurs who have prior experience as entrepreneurs and/or as informal investors are more likely to participate in export activity.

Therefore, we follow González et al. (2010), who emphasized that entrepreneurial practice acquired in the past can provide expertise to generate new business projects that are not necessarily limited to the local market. However, Federico et al. (2009) found mixed results when considering the effect of past entrepreneurial experience in different countries. For instance, while this relationship is significant in Southeast Asian countries, in the Latin American context, the relationship is not significant. Despite the above findings, the composition of Latin America is not homogenous (Hofstede 2001), and differences among countries are based on cultural and economic factors that influence entrepreneurial behavior (Acs and Amorós 2008). In this context, the Chilean economy represents a unique setting due to the liberal economic policy that has been implemented in Chile over the last few decades. Therefore, considering that owner-managers face high competition in the Chilean economy, this context may lead owner-managers who have prior experience to recognize the importance of exploiting opportunities not only in the national market but also in the international market. Based on this theorizing, we propose the following:

Hypothesis 2: Those firms owned and managed by entrepreneurs with previous entrepreneurial experience have a higher likelihood of early internationalization.

Organizational factors

In the above discussion, we focused on those characteristics and attributes related to owner-managers. However, beyond the individual level, there are organizational-level characteristics that affect new ventures' early internationalization (Zucchella et al. 2007). Research on internationalization has pointed out the importance of firm characteristics (Ruzzier et al. 2006), specifically the firm's strategic behavior (Efrat and Shoham 2013) and the technological capabilities used by the firm (Brach and Naudé 2012). Therefore, in this section, we focus on strategic orientation and the newness of technology as potential factors that may influence early firm internationalization.

Strategic orientation Strategy concerns how a firm develops advantages with respect to its competitors (Porter 1985). According to Porter (1985), cost leadership strategy and differentiation strategy are the two generic strategies for competing in any industry. Firms that follow a low-cost strategy compete by offering a lower price than their competitors based on absolute cost advantages. Advantages are created when the firm's cost of production or service is lower than its competitors. In contrast, the differentiation strategy focuses on the benefit or quality of a product or service by creating something unique (e.g., design, quality, or innovation) for customers.

The extant literature has assumed that rapid entry into foreign markets is due to the strategic differentiation firms cultivate. Some studies—for instance, those on differentiation strategies (Bloodgood et al. 1996) and niche-focused strategies (Loane et al. 2007; Zucchella et al. 2007)—have empirically supported the above arguments on how strategy affects early internationalization. However, other studies have not found differences between firms that internationalize rapidly and those that internationalize gradually regarding product and service differentiation (e.g. Belso-Martinez 2006; Bosma et al. 2008).

For new firms, it is often difficult to compete using low-cost strategies because new entrants are less able to take advantage of forward and backward linkages, capture internal economies of scales (which requires an excessive amount of capital), and reduce cost because of learning curve effect. Therefore, it seems that new entrepreneurs' strategies should focus on innovative products or services or on other types of differentiation, such as managerial or marketing differentiation, to increase their competitive advantage. We suggest that when entrepreneurs are aware of their innovation (Kang and Jin 2007) and follow differentiation strategies, they are likely to extend their operations beyond national borders to exploit new opportunities. Based on this theorizing, we propose the following:

Hypothesis 3: Those new firms that use differentiation strategies based on products or services have a higher likelihood of early internationalization.

Newness of the firm's technology Based on the resource-based view, some researchers believe that technological capacities can create the roots of competitive advantage for firms and that early internationalization is due to radical innovation (Rialp et al. 2005; Rialp and Rialp 2007). For instance, technological intensity has significantly positive impacts on small technological firms' early internationalization (Li et al. 2012). However, Gassmann and Keupp (2007) refuted the presumption that early internationalization is carried out only through radical innovation. It has been documented that the driving force behind internationalization is firms' knowledge of how to acquire international competitive advantage (Gassmann and Keupp 2007), exploit international opportunities, and exploit currently available technology for different uses (Mainela et al. 2014) beyond innovation per se. Therefore, early internationalization is not a phenomenon that is exclusive to high-tech sectors as the use of technology and the way it is applied may play an important role for internationalization among new ventures in any sector.

Small and medium firms are practicing extensively open innovation activities (Lichtenthaler 2008; van de Vrande et al. 2009). Even though technology is not (generally) created inside the firms that use it and the technology could be available for any new incumbent, applying existing technology in novel ways could represent an innovation in itself. This requires technology exploration and exploitation activities (Chesbrough and Crowther 2006) by entrepreneurs. One important consideration here is that firms do not exploit their technological assets equally. The use and application of existing technology require skills, effort, and investment—that is, a set of activities that provides the basis of a firm's value (Onetti et al. 2012) by creating specific advantages (Shih and Venkatesh 2004; Peltier et al. 2012) and capabilities. Technology appears to be an important factor for the pace of born global firms (Taylor and Jack 2013) because the extent to which firms' advantages are based on new technologies would lead them to go international as an alternative to exploiting their technological capacities, reducing the threat of imitation (Sapienza et al. 2006), and creating niche markets (Taylor and Jack 2013).

Brach and Naudé (2012) found that firms in developing countries that introduce new technology have a higher probability of entering into export markets. This gives evidence that the newness of the technology a firm uses to generate a competitive advantage matters. Extending this idea, we argue that a new venture is more likely to become international after its inception if the firm internalizes a newly established technology instead of using an old technology or a very new technology. This assumption is based on the reasoning that when internal routines are created using old technologies, the firm's competitive advantage is already old and the presence of competitors leads entrepreneurs to reduce their incentive to go international. On the other hand, a very new technology may be less available for entrepreneurs. Even if it were available, the cost and risk of obtaining new international markets when customers are not prepared could threaten entrepreneurial activities. Therefore, when entrepreneurs use a relatively new and widespread technology in new applications to satisfy new needs, they are more likely to become international. Based on this theorizing, we propose the following:

Hypothesis 4: Those new firms that use recent technologies (neither very new nor very old) have a higher likelihood of early internationalization.

Environmental factors

Going beyond individual and organizational characteristics, the third group of factors that may affect the early internationalization of new ventures is firms' external context (Ruzzier et al. 2006). Even though there is substantial evidence concerning the importance of environmental factors in shaping firm competitiveness (Porter 1990), in the international entrepreneurship field, firms' external factors have received little attention (Zahra and George 2002; Crone 2010; Fernhaber et al. 2007). Since firms' geographical location and local industry structure may affect firm behavior (Glaeser and Kerr 2009) and, consequently, the decision to go international, we focus our analysis on location and sector as two main determinants of international entrepreneurship. Next, we discuss and

develop two specific hypotheses concerning the influence of external factors on new ventures' early internationalization.

Location—urban area Researchers have paid scant attention to firms' spatial location in relation to international entrepreneurship (Yeung 2009). The spatial discipline suggests that all places are not equal (Crone 2010) and that the resources within a firm's geographic location represent a key determinant for internationalization (Porter 1990). Moreover, empirical evidence shows that localization matters for small and medium firms' export performance (Freeman et al. 2012). In this context, geographical location could be an important factor in early internationalization because location can provide firms access to unique knowledge and resources (Zahra and George 2002). According to Bosma (2008), regional differences matter, and a main determinant of new firm formation arises from agglomeration effects.

Agglomeration effects can be split into localization and urbanization economies. Localization economies are external to the firm and internal to the industry (Parr 2002), whereas urbanization economies are external to the industry but internal to the metropolitan agglomeration. In this context, urban areas offer a favorable incubator condition for entrepreneurship (Nijkamp 2003). By considering that network origins are based on social/personal and business situations (Harris and Wheeler 2005), we argue that in urbanization economies, entrepreneurs may have access to more resources and networks that provide entrance to foreign markets. Supporting the above arguments, Spence et al. (2011) found that new international ventures are twice as likely as non-exporters to be located in urban locations. However, Westhead et al. (2001b) found that United Kingdom firms located in rich urban areas are significantly less likely to be exporters.

Considering the Chilean context, entrepreneurs' geographic location may have significant effects on their development due to the existence of strong regional unevenness (Amorós et al. 2013). In fact, the Santiago Metropolitan Region (Chilean capital) has one of the highest primacy indexes (a proxy of demographic and economic concentration) in the world (UN-Habitat 2008), and this plays an important role in all of the country's economic activities. Consequently, the entrepreneurs of this region may have more opportunities to be involved in global networks than entrepreneurs of other regions. Based on this theorizing, we propose the following:

Hypothesis 5: Those new firms located in metropolitan areas have a higher likelihood of early internationalization.

Sector The industrial sector—where social and economic attributes are shared by populations of organizations providing similar goods or services (Child 1988)—may play an important role in firm internationalization (Dimitratos et al. 2004) and could determine the speed of new venture internationalization. Sector characteristics, such as product types, production technology, or market attributes, may be more relevant for internationalization than firms' internal dimensions (Fernhaber et al. 2008). Some new firms gain advantages from their industrial sector because they have access to information, knowledge, and networks that increase their likelihood of becoming exporters

(Zucchella et al. 2007). That is, exposure to an import–export environment often stimulates a firm’s drive to internationalize (Fernhaber et al. 2007). For instance, international entrepreneurship has been linked to high-tech sectors. However, early internationalization is not only related to high-tech sectors (Gassmann and Keupp 2007); the degree of internationalization within an industrial sector may also influence new ventures’ internationalization (Fernhaber et al. 2007).

Arias and Peña (2004) highlighted that international intensity is shaped by the “export tradition” of the sector. In the Chilean context, there are several natural resource sectors that have a long tradition of exporting products, including the wine industry, aquaculture, forestry, and—the most important—mining and minerals. Following this empirical evidence about the relevance of the industrial sector for internationalization speed and intensity, our interpretation is that new ventures are more likely to internationalize after inception if they belong to the traditional exporter sectors, specifically those related to the extractive sector in the Chilean context (e.g., farming, forestry, fishing, and mining). Consequently, we propose the following:

Hypothesis 6: Those new firms that operate in traditional export sectors have a higher likelihood of early internationalization.

Methodology

Sample

We used a representative sample of the adult population in Chile (between 18 and 64 years old) from the Global Entrepreneurship Monitor (GEM) project.³ The GEM project is the largest international research initiative analyzing the propensity of a country’s adult population to participate in entrepreneurial activities and the conditions that enhance these entrepreneurship initiatives. The GEM project’s methodology provides indicators from individuals involved in different stages of entrepreneurship dynamics (Amorós and Bosma 2014), including, for example, start-up efforts, nascent entrepreneurs (i.e., individuals involved in setting up a business), new firms (i.e., those that have paid salaries and wages for more than 3 months and less than three-and-a-half years), and established firms (i.e., those that have paid salaries and wages for more than three-and-a-half years). Therefore, the GEM database fits our study well because it is a comprehensive source of information that enables us to analyze and understand the early internationalization of new ventures in Chile. In 2010, a standardized adult population survey was conducted on a representative sample of approximately 2,000 people in 59 countries, yielding responses from a total of 175,000 individuals. Chile had one of the larger samples (more than 7,000 Chilean adults participated in 2010), and almost all Chilean regions participated in the GEM project. Participants were randomly selected, and the survey was conducted by telephone and through face-to-

³ For more details on the GEM project’s data-collection design and implementation, see Reynolds et al. (2005).

face procedures. GEM's primary objective is to estimate the prevalence of individuals involved in entrepreneurial activity at a single point in time. We focused on those respondents who were actively involved in new entrepreneurial activities and were current owner-managers of a firm. Because there is a fuzzy demarcation between nascent entrepreneurs and new firms (i.e., when an entrepreneur's endeavor is considered operative), we did not include incipient start-ups because empirical evidence (Amorós and Poblete 2011) has shown that entrepreneurs in the very early stages of venture creation are commonly in the formalization phase. Moreover, many of them are "informal." Therefore, following GEM definitions and the project's methodology (but in a more restrictive way), we defined new firms (or new entrants) as those entrepreneurs who have paid salaries and wages for more than 1 year but less than three-and-a-half years. Using this definition, our final sample consisted of 374 respondents.

Variables

Dependent variable In the proposed model, the dependent variable is the entrepreneur's likelihood of becoming international. Even though there is no clear agreement on what criteria should be used to identify new international ventures (Gabrielsson et al. 2008; M. V. Jones and Coviello 2005; M. V. Jones et al. 2011), we followed the research line that considers two parameters: speed and percentage of firm sales generated by exports (e.g. Autio et al. 2000; Federico et al. 2009). Related to speed, there are different approaches addressing the time required to be an early internationalized firm (Taylor and Jack 2013). These differences range from 2 years (McKinsey and Company 1993), 3 years (Knight and Cavusgil 1996), 6 years (Zahra 2005), to 8 years after inception (McDougall et al. 1994). In general, internationalization has to occur within 6 years after foundation to be considered early (Oviatt and McDougall 1997; Loane et al. 2007). Related to the percentage of firm sales generated by exports, most often, 25 % of a firm's total turnover (Knight and Cavusgil 1996, 2004) is cited as the cutoff value to operationalize an international new venture. Other studies have used a mix of different combinations between year and percentage of exports, such as some export in the first year, 25 % of exports by the third year, and at least 50 % of exports by the eighth year (Federico et al. 2009). Following previous studies that use a mix of different combinations of year and percentage of exports, we considered new ventures with the following attributes to be international: 1) their exports represent more than 25 % of total sales and 2) fast internationalization, as a proxy of speed, when the above mentioned percentage is achieved by firms less than 42 months old. Therefore, both parameters were used to discriminate new international ventures from non-international new ventures, and we created a dummy dependent variable (0 = non-international new venture and 1 = international new venture) to represent each.

Independent variables Following our hypotheses, we classified the independent variables into three categories, as previously described: entrepreneurial owner-manager factors, organizational factors, and firm environmental factors. Regarding entrepreneurial characteristics, two variables were considered. To measure *motivations to become an entrepreneur*, we created a binary variable (1 = opportunity reason and 0 = other reasons) by asking participants about their motivations to become an entrepreneur. The measure for *business experience* is a binary variable that was identified by asking

respondents if they had a firm that closed within the last 12 months or if they had another firm at the moment of the survey (1 = business experience and 0 = no business experience). Regarding organizational factors, two variables were used. To assess *product strategy*, we asked respondents about the newness of their current products or services by considering three categories ranging from “not new to any customers” to “new to all customers.” The *newness of technology* used by the firm was measured by asking respondents how old the technology they use is. Respondents could choose among three answers: “less than 1 year old,” “between one to 5 years old,” and “more than 5 years old.” Regarding firm environmental factors, we defined two main variables. The *location—urban area* variable measured the spatial context in which owner-managers run their firms. In this case, we defined a binary variable with 1 = the firm is located in the Chilean capital (Santiago de Chile) or cities close to the capital and 0 = the firm is located farther outside the capital. *Sector* was measured using four categories: extractive (e.g., farming, forestry, fishing, or mining), transforming (e.g., manufacturing, wholesale, or construction), business services, and final/consumer-oriented activities (e.g., retail, personal services, restaurants, etc.)

Control variables We identified five main control variables that may affect early internationalization: entrepreneur age, entrepreneur gender, entrepreneur educational level, firm size, and firm growth intention. *Entrepreneur age* may be considered a proxy variable for human and social capital, so we expect it to have a positive effect on internationalization (Andersson et al. 2004). However, empirical evidence has been ambiguous regarding the possible importance of entrepreneur age on internationalization (K. Jones and Way 2011), so we used it as a control variable, expecting it will increase the likelihood of early internationalization. Second, we took into account *entrepreneur gender* as a potential variable affecting the internationalization of new firms (K. Jones and Way 2011). Following the social feminist thought (Johnsen and McMahon 2005) arguing that men and women have different socialization processes, we assumed that these differences may also affect the early internationalization of new ventures (Orser et al. 2010). Even though there is mixed evidence (Manolova et al. 2007), we expect this variable to be positive for males because Chilean women are generally less likely to be international entrepreneurs (Amorós and Poblete 2011). Third, to measure *entrepreneur educational level*, we asked respondents about their educational studies using eight possible response choices. We created a dummy variable by discriminating those entrepreneurs who graduated with university degrees from those who did not. However, based on the mixed evidence that has been found between educational level and international entrepreneurship (e.g. Zucchella et al. 2007), we assumed that educational level could be a proxy for human capital and network capital. Moreover, considering that the educational system in developing countries is a primary alternative for social mobility and knowing that this variable plays a significant role for entrepreneurs (Davidsson and Honig 2003; Hanushek and Woessmann 2012), we expect that level of education will increase the likelihood of early internationalization in new ventures. Fourth, we considered *firm size* a control variable because international new ventures tend to be larger than non-exporters (Spence et al. 2011). Firm size was measured by number of employees, and we expect a positive sign for firm size. Finally, because firms that internationalize early show a strong growth orientation (Spence et al. 2011; De Clercq and Bosma 2008; Autio et al.

2000), we controlled for growth expectation, expecting it to increase the likelihood of early internationalization in new ventures. To assess *firm growth expectation*, we asked respondents about their intention to create new jobs in the next 5 years.

Method

As we state in our hypotheses, the empirical approach aims to probe the likelihood of a new firm to internationalize early. Generally speaking, we estimated the effects caused by each independent variable on the likelihood that the dependent variable will take the value of 1 (international entrepreneur) as opposed to a value of 0 (non-international entrepreneur). In this approach, we did not estimate the “degree” of the international operations (i.e., how much a new firm sells to international customers); rather, we explored whether a firm was international or not in its early stage. Consequently, our dependent variable is categorical-binomial (i.e., international and non-international new entrepreneurial firms), and we used a logistic regression model to corroborate our hypotheses. Other studies have used this technique in the international entrepreneurship field (Munari et al. 2010; Westhead et al. 2001a) with similar objectives. In summary, this technique enabled us to identify which variables were the most important in categorizing international and non-international new ventures.

Results

Table 1 shows the descriptive statistics and correlation matrix. As can be seen, multicollinearity is not a problem because none of the correlations appear to be large (Hair et al. 2010). Since the variables were self-reported, we checked for common method bias by entering all the variables into a factor analysis (Podsakoff and Organ 1986). The results show that common method bias is not a concern. The average entrepreneur age is 40 years old, almost 60 % of the respondents were male, and firms had an average of four employees.

The results of the logistic regression are presented in Table 2. The chi-square test of the model is significant ($p < .01$). The Hosmer and Lemeshow measure, which measures the correspondence between the actual and predicted value of the dependent variable, is not significant, indicating a good model fit. Therefore, the results support the model’s ability to predict early internationalization. The R^2_L ratio, which is based on improvements in the log-likelihood value, is .16. Moreover, the percentage of cases classified is 82.6 %.

For each predictor variable, Table 2 shows the following: the maximum likelihood estimate (β), the significance of the estimate, estimates of the robust standard errors of the estimated coefficient (in parentheses), the Wald statistic, and the odds ratio. To interpret our results, we used the odds ratio, which shows the probability of an event occurring (i.e., the firm becoming international) versus the probability of the event not occurring, the marginal effect for continuous variables, and the discrete effect for dummy variables. As shown in Table 2, four variables are significant: motivation to become an entrepreneur, newness of the technology used by the firm, sector, and

Table 1 Descriptive statistics and correlations matrix

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Dependent variable (international entrepreneur =1)	0.175	0.380	1											
2. Firm size	3.490	6.245	.101	1										
3. Gender	0.595	0.491	.149*	.118*	1									
4. Entrepreneur age	40.444	13.399	-.043	.019	-.076	1								
5. Entrepreneur educational level	0.210	0.408	.180*	.126*	.223**	-.064	1							
6. Business experience	0.218	0.413	-.020	.053	-.003	.036	.032	1						
7. Motivation to become an entrepreneur	0.558	0.497	.168**	.117*	.196**	-.187**	.233**	.037	1					
8. Firm growth expectation	0.159	0.366	.090	.516**	.148**	-.023	.174**	.038	.120*	1				
9. Product strategy	1.606	0.721	.045	.013	-.015	-.008	.089	.017	-.049	-.008	1			
10. Newness of technology use by the firm	2.474	0.736	-.027	.043	.016	.052	.009	-.004	.035	-.010	.027	1		
11. Location-urban	0.123	0.330	.063	.103*	-.073	.006	.047	-.100	-.077	.105*	.013	.013	1	
12. Sector	3.293	0.901	-.111*	-.137**	-.225**	-.090	-.088	.059	-.083	-.142**	-.084	-.072	-.050	1

**Significant at .01 level; *Significant at .05 level

Table 2 Results of the logistic regression analysis

	Dependent variable: 1 = international entrepreneur, 0 = non-international entrepreneur		
	β (S.E.)	Wald	Exp(β)
Control variables			
Firm size S.E.	.0124 (.010)	.300	1.012
Gender (1 = male)	-.451 (.331)	1.723	.637
Entrepreneur age	-.004 (.011)	.104	.996
Firm growth expectation	.000 (.000)	.267	1.000
Entrepreneur educational level (1 = university degree)	.557* (.337)	2.782	1.746
Independent variables			
Entrepreneurial owner-manager factors			
Business experience (1 = business experience) (H1)	-.268 (.381)	.516	.765
Motivation to become an entrepreneur (1 = opportunity) (H2)	.804** (.318)	5.546	2.235
Organizational factors			
Product strategy (H3)			
Product strategy (not new to any customer)	-.025 (.455)	.002	.975
Product strategy (new to some customer)	.456 (.468)	.903	1.577
Newness of technology use by the firm (H4)			
Technology use of the firm (less than 1 year old)	-106 (.447)	.052	.899
Technology use of the firm (between 1 to 5 years old)	.699** (.355)	4.355	2.012
Environmental factors			
Location-urban (1 = Santiago de Chile) (H5)	.538 (.415)	1.664	1.713
Sector (H6)			
Extractive sector	1.554** (.907)	4.418	4.731
Transforming sector	.0687 (.381)	.035	1.731
Business sector	.307 (.376)	.635	1.360
Statistical information			
-2 log likelihood		307.13	
χ^2		36.23***	
(df)		(15)	
Nagelkerke Pseudo-R ²		.16	
Overall predicted accuracy %		82.6 %	
N° observations		374	

***Significant at the 0.01 level; **Significant at the 0.05 level *Significant at the 0.10 level

Sector (consumer oriented = reference category); Product strategy (no product or service could be considered as new = reference category); Technology used (more than 5 years technology = reference category)

educational level. We did not find the rest of the variables to have a significant impact on new international entrepreneurship. Consequently, while Hypotheses 1, 4, and 6 are supported, we did not find strong evidence to support Hypotheses 2, 3, and 5, which are related to entrepreneurial experience, strategy, and location—urban area, respectively.

Discussion and conclusion

We conducted this research with the aim of examining which factors (i.e., entrepreneurial, organizational, and environmental) are related to entrepreneurs' early internationalization in the Chilean context. Overall, based on our empirical findings, our main conclusion is that in the analyzed sample, entrepreneurs' ability to go international depends on the intrinsic qualities of the entrepreneur (i.e., entrepreneurs' motivation to become an entrepreneur controlled by educational level), organizational characteristics (i.e., the newness of the technology used by the firm), and one firm environmental factor (i.e., sector).

Regarding the individual level, we theoretically assumed that the motivation to become an entrepreneur is an important factor for new firms' internationalization (Hypothesis 1). We found that opportunity motivation—through voluntary participation in entrepreneurial activities to develop an innovative posture (Kundu and Katz 2003; Kang and Jin 2007), creating new products/services, or discovering new applications for existing products/services—is related to international entrepreneurs ($\beta = .804$, $p < .05$). Entrepreneurs who are driven by opportunity motivations to start their firm are 10 % (based on discrete change) more likely than necessity-based entrepreneurs to go international, holding all other variables at their mean. Therefore, this result gives more evidence regarding the importance of entrepreneurs' vision to discover opportunities beyond the domestic market (Johnson 2004; Hessels and Terjesen 2008) as a driving force for early internationalization. This finding is particularly relevant in countries like Chile that have relatively small internal markets (in terms of population and size of the economy). Even when entrepreneurs are able to capture a portion of the internal market share with their products or services because of their ability to discover real business opportunities and exploit them, the “natural” restriction of this type of internal market in terms of limited potential customers may motivate early firm internationalization to gain new markets beyond national borders.

Even though we expected to find a positive relationship between business experience and international entrepreneurship (Hypothesis 2) because experience could make entrepreneurs more alert when seeking and recognizing opportunities abroad as well as more prepared to take advantage of international opportunities, the relationship is not significant. Zucchella et al. (2007) found similar results in the Italian context, as did Federico et al. (2009) in the Latin American context. This result may be explained by studies' tendency to consider only previous business experience dimensions (e.g., business discontinuance or serial entrepreneurship) as proxies for capturing the essence of human capital and social capital. Therefore, future research should refine this variable or include additional variables to better capture serial entrepreneurs' backgrounds by considering, for example, the type of business experience and whether the experience is related or unrelated to the current activity.

Regarding organizational factors, we found that firms' differentiation strategy (i.e., the newness of their current product or service) is not significant (Hypothesis 3). This result could be related to the fact that many international new ventures are not competing in international markets with innovative products or processes (Perks and Hughes 2008) or acting cautiously with very innovative products or services (Runyan et al. 2012). Following Dimitratos et al. (2014) explanation, this can also be linked to the particular characteristics of new Chilean ventures—for example, the type of

products or services Chilean ventures use to compete (we will discuss this in relation to Hypothesis 6) and their relatively low experience in international markets. As a consequence, their interactions with international markets may not be sophisticated enough “to lead to the generation of innovative products and processes” (Dimitratos et al. 2014, p. 912). Another explanation is that the strategic behavior (i.e., cost and differentiation strategy) variable does not capture the way international entrepreneurs compete. It may not be the generic strategic position of the firm that matters but other characteristics, such as a customer-oriented or niche-oriented position, as has already been discovered in qualitative research (Evers 2011). Future research should explore the possible combination of customer-oriented position with cost or differentiation behavior strategy and their effects on international entrepreneurship. This potential research path could be even more important in developing countries and in non-high-tech sectors because entrepreneurs can compete by using a differentiation leadership strategy (i.e., introducing innovations in products, processes, or management) or a cost leadership strategy (i.e., exploiting a country’s low-cost economy) as well as by being focused on international customer needs.

Even though it seems that strategies based on product or service differentiation do not increase a firm’s likelihood of becoming international, technology does. We found that the coefficient of the newness of the technology (between 1 and 5 years old) used by firms increases their likelihood of becoming international (Hypothesis 4) ($\beta=.699$, $p<.05$). Namely, we interpret that the use and application of existing technology require skill, effort, and investment and create specific advantages that enable firms to become international. This result is in line with our hypothesis stating that for the Chilean context, neither novel technology (less than 1 year old) nor old technology (more than 5 years old) is a driving force for new entrepreneurs to become international after inception. This result reinforces what has already been found in the international entrepreneurship literature regarding new products and services and the technology used by firms (Hessels and Terjesen 2008). Specifically, our result extends previous research carried out in developing countries (e.g. Brach and Naudé 2012). While existing research has already discovered that technology matters for international entrepreneurship, we captured a more nuanced aspect of technology by showing how the newness of the technology used by firms (i.e., old, new, or very new) is also an important characteristic.

Finally, regarding environmental factors, contrary to our expectation, we found that urban agglomeration is not a significant variable for early internationalization (Hypothesis 5). We hypothesized that entrepreneurs living in large agglomerations, such as Santiago de Chile (the Chilean capital), would be more likely to detect international opportunity than entrepreneurs living in regions outside urban areas. This result could be explained by the country’s strong export orientation (Hypothesis 6). More specifically, in Chile, natural resource industries are not necessarily located in urban areas. Given the natural resource exporting tradition of Chile, we hypothesized that new firms operating in export sectors are more likely to internationalize early. This theorizing is accepted in Hypothesis 6. We found that new ventures operating in the extractive sector (e.g., farming, forestry, fishing, and mining) are more likely to internationalize early ($\beta=1.554$, $p<.05$). With this result, we extend prior research arguing that early internationalization is not necessarily linked to high-tech sectors (Rialp et al. 2005) by discovering that in developing countries (such as Chile), the traditional natural resource

export sector also creates conditions for early internationalization. Therefore, the internal interactions among some industrial sectors are important driving forces associated with new ventures' internationalization. There is an extensive literature regarding developing countries' dependency on natural resources (e.g. Felzensztein and Gimmon 2008), and this study confirms this tendency among entrepreneurs who become international shortly after inception, indicating the difficulty for countries to diversify their economies.

Additionally, our control variables also provided interesting results. It is worth highlighting that entrepreneur educational level is positively related to early internationalization ($\beta=.557, p<.05$). Entrepreneurs who have a university degree are 7 % percent more likely than other entrepreneurs to go international, a finding that is in line with other studies (e.g. Kundu and Katz 2003). The rationale behind the importance of education in developing countries like Chile is that access to higher education is not only related to human capital resources but also to social capital, such as personal and professional networks. According to Gerber and Cheung (2008) and Stevens et al. (2008), individuals may acquire valuable social capital (i.e., social contacts) through the process of obtaining formal education that can be leveraged to mobilize resources when pursuing entrepreneurial opportunities (De Clercq et al. 2010). In developing economies like Chile where access to education is limited to a privileged group of society, education serves as a way to create social networks that are useful for becoming an entrepreneur as well as an international entrepreneur.

Contributions

In summary, following the current debate in the international entrepreneurship field (Kiss et al. 2012), our study makes important contributions. First, because of the exploratory nature of our research, its main contribution is to extend and provide additional evidence for the extant body of knowledge concerning the effect of individual, organizational, and firm environmental factors on explaining new entrepreneurial ventures' internationalization. In this sense, our study validates findings related to international entrepreneurship by empirically showing that education level, motivation to become an entrepreneur, newness of the technology used in the firm, and industrial sector are significantly related to internationalization. Second, our findings contribute to the literature on international entrepreneurship by addressing calls for extending empirical research on international entrepreneurship beyond developed countries (e.g. Federico et al. 2009; Zahra et al. 2009; Kiss et al. 2012). As such, we extend existing empirical studies in developing countries (e.g. Naude 2010; Naudé and Rossouw 2010; Chen et al. 2009) by analyzing the individual, organizational, and firm environmental factors associated with the internationalization of new firms in the Chilean context. Both contributions are in line with the call for a more systematic approach to expand empirical studies (e.g., Federico et al. 2009) by gradually incorporating theoretical ideas from other fields to increase international entrepreneurship knowledge and by adding new variables and relationships to better understand international entrepreneurship phenomena. This may advance the theory-building process for analyzing, explaining, and predicting the phenomena under study (M. V. Jones and Coviello 2005; Rialp et al. 2005; Zahra and George 2002).

Given the importance of high-growth and international start-ups for economic growth and development (Shane 2009), our results may also enable policymakers to identify potential guidelines for encouraging young firms to internationalize and to raise awareness among entrepreneurs of the importance of human capital (via training for actual and potential entrepreneurs). Additionally, the newness of technology used by firms is a relevant factor for early internationalization, so specific policies are required to improve mechanisms for technology transfer (i.e., exploration and exploitation). For instance, policies to promote an environment of open innovation considering the role of human capital, entrepreneurial capital, and competition may be important. At the firm environmental level, our findings add more evidence about the Chilean economy's dependence on traditional export activities. Namely, we found that the extractive sector is an important driving factor for early internationalization in Chile. Even though the organization of the Chilean economy based on natural resource clusters has advantages, the country's challenge is to move to an innovation-driven economy. In order to diversify its export activities beyond simply commodities, Chile should create conditions for developing entrepreneurial activities, especially for supporting international entrepreneurship (Dimitratos et al. 2014) in alternative sectors or strengthening the forward and backward linkages of natural resource sectors (by adding aggregate value to the activities related to natural resources).

Limitations and future research

Although we provided useful insights into new firms' early internationalization, this exploratory study faced some limitations. First, our findings should be taken with caution when generalizing the results beyond the scope and context of this study: Chile. Therefore, it would be worthwhile for future research to tackle this limitation by creating a representative sample of Latin American countries to better understand international entrepreneurship phenomena in this specific geographic area. Moreover, comparative country studies are necessary to analyze these phenomena from a wide perspective by considering what factors affect international entrepreneurship in different contexts.

Second, because the cross-sectional data we used prevented us from defining causality in our study, future research should analyze those factors that affect international entrepreneurship using a longitudinal study in order to perform panel data analysis.

Third, related to the nature of the data, estimation procedures could be more robust by pulling different year data in order to increase the number of observations. Additionally, because we used a dummy dependent variable, we may have underestimated relevant information about the intensity of new firm internationalization (e.g., internationalization rate). Thus, more in-depth information about the phenomenon is needed. It is possible that different forces govern: 1) being international or not during the early stage and 2) the intensity of internationalization of those new firms that are international. For instance, a multinomial model with the expected value of the internationalization rate could be a complementary approach.

Fourth, our study focused on factors that are related to internationalization in young firms. However, we did not analyze the relationship between early internationalization

and firm performance. There is empirical evidence supporting the positive effect rapid internationalization behavior has on performance and survival (Autio et al. 2000; Coeurderoy et al. 2012). In this sense, future research should analyze the relationship between early internationalization and firm performance in the Chilean context and in other developing economies.

Finally, most of the variables used in this research represent proxy variables. Future research on international entrepreneurship in the context of developing economies should use observable and latent variables (i.e., non-observable variables) to better capture the individual, organizational, and environmental aspects that affect early internationalization. By capturing demographic and behavioral dimensions, future studies can obtain a more accurate picture of those factors that impact international entrepreneurship. Consequently, the international entrepreneurship field needs to evolve by linking its knowledge with that of other research fields (e.g., internationalization, entrepreneurship, and family business) while also developing its own measures to capture the essence of international entrepreneurial dimensions.

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