Causal Recipes for Internationalization speed – an exploratory study

ABSTRACT

This study explores causal combinations that are associated to internationalization speed. It uses Qualitative Comparative Analysis to study a sample of small entrepreneurial software exporters. The study examines the configurations of motivations and perceptions that lead entrepreneurs to fast internationalization. The study finds three configurations that combine the insights of different theoretical approaches and lead to the same outcome: fast internationalization.

Keywords: Internationalization speed, international entrepreneurship, entrepreneurship, small enterprises.

INTRODUCTION

Fast-internationalizing firms challenge theories of internationalization that emphasize gradualness (Johanson and Vahlne, 1990). In spite of their liability of newness, and often of smallness, these companies internationalize rapidly, even before expanding domestically (Rennie, 1993). A number of studies examine fast internationalization and introduce new analytical categories such as International New Ventures and Born Globals (Oviatt and McDougall, 1994; Madsen and Servais, 1997) to characterize the phenomenon. There is a lively debate surrounding the exact features that INVs and BGs have, or should have to be considered one, such as the number of regions or continents they export to, and the link between fast internationalization and performance (Knight and Cavusgil, 2005; Zahra, 2005). Most scholars, however, agree upon the fact that the speed of internationalization distinguishes these companies from other companies that follow a more conventional gradual approach when expanding abroad (Oviatt and McDougall, 1994; Sharma and Blomstermo, 2003). Salient questions remain. For example, how do we explain internationalization speed? Are all firms that internationalize fast homogenous in their characteristics? This article explores causal configurations that result in fast internationalization. The thesis is that there are several different causal paths to fast internationalization, and that each is associated to different combinations of entrepreneurial motivations and perceptions.

Studies of fast internationalizing firms bring together different theoretical streams: scholars of international business and scholars of entrepreneurship (Bloodgood et al., 1996; Bell, 1995; Coviello and Jones, 2004; McDougalll and Oviatt, 2000). As a result, there is a variety of often competing approaches explaining the speed of internationalization. Some authors emphasize that the nature of the industry affects the outcome – fast changing industries characterized by low barriers to trade, as software and services, stimulate the emergence of fast-internationalizing firms (Autio, Sapienza, & Almeida, 2000; Bell et al., 2003; Jones, 1999; Sharma & Blomstermo, 2003). However, not all firms operating in these industries behave similarly (Bell, 1995; Bell et al., 2004; Coviello and Munro, 1997). Other authors argue that factors external to the firm, such as the size of the country of origin and the existence of opportunities in other markets explain the speed of internationalization (Knight and Cavusgil, 1996; Rennie, 1993; Phan and Fan, 2007; Moen, 2002; Rugman et al., 2011).

Scholars that draw from the entrepreneurship literature emphasize the importance of the experience and background of the entrepreneur, which can substitute for the lack of firm-level experience and capabilities (Oviatt and McDougall, 2000; Kuivalainen et al., 2007; Shepherd and Tienne, 2005; Dimitratos et al., 2010). The attitude of the entrepreneur is another important variable that may affect internationalization speed, especially pro-activeness and risk propensity (Javalgi and Todd, 2011). Some researchers contradict this view, pointing out that entrepreneurs may simply react to the opportunities that emerge in domestic and international markets, which depend on a variety of factors, ranging from their networks to unplanned for, serendipitous events (Ellis, 2000). Finally, even assuming that pro-activeness leads to faster internationalization, the link between entrepreneurial motivation, perception and behavior has not yet been examined.

Despite the growth in studies of BGs and INVs, the antecedents to fast internationalization remain a highly disputed issue in the literature (George, 2011). Most of the existing empirical research on fast internationalizing firms attempts to establish one explanation in lieu of others, assuming that there is one main set of preconditions that lead firms to internationalize early (Zhou, Wu and Luo, 2007; Kuivalainen, Sundqvist, and Servais, 2007; Tuppura Saarenketo,

Puumalainen, Jantunen, and Kyläheiko, 2008). This is however inconsistent with the findings of qualitative studies, which reveal that there may be different combinations of conditions linked to internationalization speed (Crick, 2009; Chandra et al., 2009; Ojala, 2009). This article pursues two objectives. The first one is to examine how different explanations of fast internationalization may be combined and linked to the outcome. The second objective is to introduce innovative methods to the study of internationalization, as called for by Welch, Piekkari, Plakoyiannaki, and Paavilainen-Mântymâki (2011). The study focuses on the recognized influence that the entrepreneur has on the decision to internationalize. The argument here is that there are different combinations of perceptions and motivations that lead to the outcome of fast internationalization. The article uses fuzzy set qualitative comparative analysis (Ragin, 2000) to explore multiple configurations that are sufficient for firms to internationalize soon after their inception. The study uncovers three causal recipes that lead to fast internationalization.

This study is structured as follows. The first section discusses the literature on fast internationalizing firms, the second introduces the methods, the third outlines the results, and the fourth discusses the results. The conclusion discusses theoretical implications and suggestions for further research.

FAST INTERNATIONALIZATION IN THE LITERATURE

Much research has been devoted to look into the antecedents of fast internationalizing firms, including both International New Ventures (INVs) and Born Globals (BGs) (Oviatt & McDougall, 1994; Madsen and Servais, 1997). These firms have been found to be young, growth-oriented, and entrepreneurial (Autio et al., 2000; McDougall & Oviatt, 2000). The most prominent feature of INVs and BGs is that- they tend to internationalize fast, soon after they have been created (Knight and Cavusgil, 2005; Oviatt and McDougall, 1994; Rennie, 1993). Several scholars establish a sharp distinction between the more traditional internationalization behavior, based on the incremental, and relatively slow, accumulation of resources as firms progress from their home market toward foreign markets (Johanson and Vahlne, 1990); and the more rapid internationalization achieved by firms that, leveraging on networks, technological advances, and other factors, are able to become international soon after they are created (Knight and Cavusgil, 2004; Bell, 1995).

Autio et al. (2000) postulate that the sooner a firm becomes international, the faster it will subsequently grow. Hence, it is important to understand the reasons for fast internationalization and why some firms internationalize faster than others (Oviatt and McDougall, 2005). Empirical studies provide a variety of possible but competing explanations, which draw on different theoretical traditions (Phan and Fan, 2007; Moen, 2002; Bell et al., 2004; Coviello and Munro, 1997; Dimitratos et al., 2010).

Oviatt and McDougall (2005) propose a model that explains speed of internationalization in terms of five forces. In their model, technology is an enabling force, competition is a motivating force, and knowledge is purported as a moderating variable, along with the entrepreneur's networks. The backbone of Oviatt and McDougall's (2005) model, though, is the entrepreneur: Entrepreneurs observe, discover − or "enact"− an opportunity, and pursue its exploitation thereafter. This opportunity is interpreted through the particular purview of the entrepreneur, and acted upon−with such interpretation being heavily influenced by her or his characteristics. In Oviatt and McDougall's (2005) model the entrepreneurial actor is the one

who primarily shapes the speed of internationalization through her perceptions. Entrepreneurial perceptions develop into attitudes and, eventually, behavior. Behavior is depicted, somewhat inherently to an entrepreneurial nature, as risk-seeking and innovative. McDougall and Oviatt (2000) define international entrepreneurship as "the discovery, enactment, evaluation, and exploitation of opportunities –across national borders– to create future goods and services." This definition includes not only behavior, but also the elements that give rise to such behavior, namely a string of causality that goes from discovery, through enactment and evaluation, and on to exploitation.

This process, however, is heavily mediated by the attitude of the entrepreneur, as it is through them that discovery, enactment and action occur. Thus, the attitudes and perceptions of the entrepreneur are postulated to be directly linked to the speed at which ventures become international. In a more recent contribution these authors argue (Oviatt and McDougall, 2005, p. 542):

> *Through the lens of their personal characteristics (e.g. years of international business experience) and psychological traits (e.g. risk-taking propensity), entrepreneurs observe and interpret the potential of the opportunity, the potential of communication, transportation and computer technology to enable internationalization, and the degree of threat from competitors. These influences on perceptions clarify or cloud the entrepreneur's decision making.*

In Oviatt and McDougall's (2005) speed of internationalization model, the process through which the entrepreneur perception and enactment of an opportunity is causally linked to early internationalization is not clear. This is also true for the literature that explores attitudinal issues and their relationship to exporting and internationalization (Chandra et al., 2009). Perceptions are often linked to the general attitudes that the entrepreneur has toward exporting, but these processes need clarification. The cognitive psychology literature, argues that a person's attitude toward an object or class of objects influences their responses to the object. In other words, there is a correspondence between attitude and behavior (see for example Ajzen and Fishbein, 1977; Fishbein and Ajzen, 1974). There are three related concepts which are sometimes subsumed under the umbrella of "attitudinal variables." First, there is the notion of motivation. Motivation is a process that originates, guides, and maintains a given behavior. Perceptions are defined as the way in which a person organizes and interprets information received through the senses. Behavior is a consistent and coherent, favorable or not, response to some class of objects. An attitude is defined in early theoretical work by Allport (1935, p. 810) as " …a mental and neural state of readiness, organized through experience, exerting a directive and dynamic influence upon the individual's response to all objects and situations with which it is related". Early definitions of attitude would ascribe to it what individuals would do. (Allport, 1935; Allport, 1954). (More recently, Eagly and Chaiken define attitude as "…a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor." (Eagly and Chaiken, 1993, p. 1). In all, we can see that some motivating factor is filtered through perception and boiled down to an attitude toward an object, which, in this case, would be exporting, early or not.

This study embraces the theoretical notion, which is based on the studies of Fishbein and Ajzen (1977, 1973), that certain attitudes toward exporting will find a correspondence in the way a person reacts toward exporting speed. The purported relationship is that a generally positive attitude toward exporting will result in behavior that is prone to exporting early. Several studies have explored the relationship between attitudes and export behavior. An early study by Cavusgil and Nevin (1981), for instance, finds that "[the] results seem to support the contention that the reluctance of firms to export may

be largely attributable to top management's lack of determination to export." (Cavusgil and Nevin, 1981: p. 119) A multitude of papers explore the issue thereupon (Calof and Beamish, 1995; Dimitratos et al., 2010; Ojala, 2009). Some studies find a positive relationship between attitude and behavior, while others find no relationship or an inverse relationship (Cavusgil and Naor, 1987; Eshghi, 1992).

In International Entrepreneurship research, and in particular in the research on international new ventures, a correspondence between certain predispositions or attitudes is purported as having a direct correspondence with certain behaviors (Coviello and Jones, 2004). Thus, rapid internationalization is associated to risk-seeking, innovative attitudes of individuals who also have an international global orientation (McDougall and Oviatt, 2000; Javalgi and Todd, 2011; Kuivalainen, Sundqvist, Servais, 2007). Some authors, for instance Wiedersheim-Paul et al. (1978), argue that exporting is a risky endeavor, and, for that reason, potential exporters may be reticent to embark on such an enterprise. In accordance, several studies have found that exporters perceive less risk associated to exporting, although there are also divergent or contradictory results (Cavusgil and Naor, 1987). These studies show that risk perceptions are an important mediator that may influence the speed of internationalization.

A second and important factor is related to perceptions associated to profitability of export markets. In some research, exporting is perceived as more profitable for the organization as selling in the local market (Ogram, 1982). Again, there is some ambiguity here because some studies (e.g. Jaffe et al., 1988) find a positive relationship between export aggressiveness and the perceptions of export market profitability, while others (e.g. Bilkey and Tesar, 1978) find no relationship or a relationship that varies with the stage of exporting the firm is in (Cavusgil, 1982; Ojala, 2009).

Thus, in this literature, sets of correlates are established to estimate the net effects of certain variables, some attitudinal and some not, on the behavior of interest (fast internationalization). The result is that perceptions are important, and in particular those associated to perceived risk and perceived profitability (Dimitratos and Jones, 2005; Kuivalainen et al., 2007).

Aside from these perceptions, behavioral intentions are also related to motivations, which can be enacted as opportunities or as constraints. Czinkota and Ronkainen (1995) provide a comprehensive list of motives of firms to enter other markets (Proactive motives: profit goals, managerial motives, foreign market opportunities, economies of scale, tax benefits. Reactive motives: competitive pressures, domestic market small, domestic market saturated, overproduction/excess capacity, unsolicited foreign orders, and others) . The most cited and relevant motivation issues are related to the limitations of the domestic market, exports by competitors, underutilized capacity, or the reception of unsolicited orders (Bloodgood et al., 1996; Ellis, 2000; Rugman et al., 2011; Javalgi and Todd, 2011; Knight and Cavusgil, 2004).

This study groups attitudinal measures into two sets of precursors of behavioral intentions toward fast internationalization. One of these two large categories contains the lens through which a person observes and interprets the object of interest, in this case foreign markets. Of particular interest here are the perceptions associated to risk and profitability (Oviatt and McDougall, 2005). A second large category of attitudinal measures is related to the entrepreneur's motivations toward exporting. The motivations need not to be all intrinsic (that is, related to exporting per se), but also extrinsic (only indirectly related to exporting, but nonetheless influencing behavior toward exporting).

Perceptions and motivations, hence, drive behavioral responses toward exporting, one such response being early internationalization. Several studies establish a relationship between these two categories of measures and the speed of internationalization (Kuivalainen et al., 2007; Lu, Zhou, Bruton, and Li, 2009; Tuppura et al., 2007) These studies, however, are *correlational* in nature and *symmetric*. They posit that the presence of a given plausible causal condition or set of causal conditions will lead to the occurrence of the outcome and, simultaneously, that the absence of a given causal condition, or set of causal conditions, thought to be associated with the outcome will result in the absence of the outcome. This study argues that this symmetry needs not be so, and that there are several possible causal paths to fast internationalization.

This study argues that the outcome, fast internationalization, may arise from a variety of different combinations of causal conditions. Or, in other words, this study argues that different combinations of causal conditions may be sufficient for the outcome. This is consonant with organizational theories of equifinality (von Bertalanffy, 1968; Katz and Kahn, 1978), or the notion that, as stated by Katz and Kahn (1978, p.30), "a system can reach the same final state, from different initial conditions, and by a variety of different paths." Also, rather than expecting the correspondence between a purported cause and an effect to be *symmetric*, this study claims an *asymmetric* relation (Ragin, 2008). This asymmetry refers to the notion that the causal conditions, or the causal recipe, that leads to the presence of an outcome may be different from the combination of causal conditions that lead to the absence of an outcome (Ragin, 2000; Ragin and Pennings, 2005). The objective is to evaluate and describe the alternative paths that lead to the outcome "internationalization speed".

These notions stand in clear contrast of a more conventional view of causality based upon correlational thinking, which has thus far been the prevailing method applied to the study of internationalization (Welch et al., 2011). With conventional correlational thinking, the assumption is that large values on the independent variable will result in large values of the dependent variable. But this may not necessarily be so. High values of the independent variable may be associated to both high and low values of the dependent variable. So, instead of reporting on the net effects of the independent variables upon the magnitude of the dependent variable, this article states the alternative causal recipes that may lead to an outcome. Although traditional correlational thinking permits doing this by specifying and statistically analyzing main effects and interactions, that procedure is cumbersome, particularly in small case-based data sets, in which the addition of independent variables in the form of controls or interaction effects of even a modest order may soon lead to model misspecification.

Finally, traditional net-effect correlational analysis may not lead to a clear determination of sufficiency or necessity. In the real world, the existence of a given combination of causal condition usually leads to sufficiency, but not necessity (Ragin, 2000). From a policy implementation standpoint, the difference between sufficiency and necessity is crucial.

The notions of equifinality and asymmetry imply an important change in the way rapid internationalization is understood. Equifinality and asymmetry mean that instead of looking for correlates whose presence adds to the magnitude of the dependent variable (speed of internationalization); we look for plausible causal combinations, or recipes, that can be associated to this outcome. This theoretical and methodological change prompts to ask questions regarding necessity and sufficiency. As Ragin (2008) points out, it is plausible to find situations in which there are occurrences of a causal condition which are a subset of the instances in which the outcome is present. In such cases, one could argue that the causal condition is sufficient for the outcome, but not necessary (Ragin, 2008). This theoretical and methodological approach may help understand the discrepancies that many studies have found in how attitudinal variables are related to export aggressiveness.

This methodology may also shed light on the configurational characteristics related to the speed of internationalization. This study examines plausible entrepreneurial attitudinal configurations that lead to early internationalization. Specifically, the questions of interest are the following:

a) In terms of the entrepreneur's perceptions and motivations, what are the plausible causal configurations that result in early internationalization?

b) What are the necessary entrepreneurial attitudinal conditions for early internationalization to occur?

c) What are the sufficient entrepreneurial attitudinal conditions for early internationalization to occur?

METHODS

Data

      Data come from in-depth case studies made in 28 Costa Rican software companies. Data were gathered through in-depth semi-structured interviews to the entrepreneurs who had founded the companies. These people were administered a questionnaire that was followed up with telephone consultations. The interviews followed an organizing instrument that included the administration of some quantitative questions. The original data set contains forty firms. Given that we are concerned with small entrepreneurial firms, the interviews were made to founders, who were the people responsible for firm internationalization (Oviatt and McDougall, 2005; Dimitratos and Jones, 2010). Thus, out of the forty firms studied, only those in which we interviewed the founder or co-founder of the firm were included. This was determined by asking the respondents, and also corroborating the self-proclaimed status of the respondent with people familiar with the industry. 33 firms were left. Of these 33 firms 5 had not yet exported at the time of the study and were thereupon excluded. The final sample had 28 firms.

To limit the effects of country of origin and industry, which some authors argue are important determinants of internationalization strategy (Bell et al., 2003; Sharma & Blomstermo, 2003; Rugman et al., 2011), this study only looks at firms exporting software packages and related services, for example maintaining and updating the software they installed for a client. All firms in the sample are "entrepreneurial" – they are led by the entrepreneur who founded them, employ less than 100 professionals, and are based in Costa Rica. The study focuses on Costa Rica because this country hosts a very dynamic high technology industry – it is the first exporter of software and information technology services in the Latin American region on a per capita basis (Ciravegna, 2012). Additionally, Costa Rica has a small economy, which allows examining, in a comparative perspective, entrepreneurial motivations for internationalizing when firms are based in small domestic markets. This study also respond to calls for international business research to adopt new methods and expand the geographic scope of its studies (see for example, Welch et al., 2011; Nicholls-Nixon, Castilla, Garcia, and Pesquera, 2011; Pérez-Batres, Pisani, and Doh, 2010).

Variables

In studying the antecedents of entrepreneurial behavior, traditional correlational studies attempt to establish a causal relationship between a variety of entrepreneurial attributes in firms that are, usually ex ante, categorized as fast internationalizers (Kuivalainen et al., 2007; Lu et al., 2009; Tuppura et al., 2007). Most studies indicate that exporters usually have a perception of less risk associated with exporting, and these perceptions of risk can be associated with export aggressiveness (Cavusgil and Naor, 1987; McDougall and Oviatt, 2000). Simson and Kujawa (1974) find that differences in perceptions of risk and profit/costs may account for variation between exporters and non exporters.

The motivations of the entrepreneur have also been explored in depth. These motivations may be extrinsic, as when a firm receives an unsolicited order, or intrinsic, as when there is a desire to expand into international markets (Ellis, 2000). Other motivations are more related to economic factors, for example the small size of the domestic market, having unused production capacity, or fear that competitors may conquer foreign markets first (Knight and Cavusgil, 1996; Rennie, 1993; Fan and Phan, 2007; Moen, 2002; Rugman et al., 2011).

This study focuses on the following motivators for internationalization speed: perceptions of risk and profitability, limitations of size of the domestic market, reception of unsolicited orders, existence of underutilized capacity, and the behavior of competitors. These factors are chosen because they summarize the key arguments of the existing literature from both the international business and entrepreneurship traditions (Crick, 2009; Bell, 1995; Dimitratos and Jones, 2005; Ellis, 2000; McDougall and Oviatt, 2000; Madsen and Servais, 1997; Knight and Cavusgil, 2005):.

Applying Qualitative Comparative Analysis to the study of Fast Internationalizing Firms

This study uses fuzzy set qualitative comparative analysis (fsQCA) to explore the research questions. fsQCA is based on set theory and fuzzy sets (Zadeh, 1965) as introduced by Ragin (2000) and subsequently extended by Ragin and Pennings (2005), Rihoux and Ragin (2009), and others. This paper explores how perceptions and motivations may form different and distinct configurations that lead to an increased internationalization speed. The paper models a relationship that is not necessarily symmetrical and reports conditions that are sufficient (but not necessary, necessarily) for the outcome to happen. The paper uses measures of consistency and coverage (Ragin, 2008) to assess how well alternative causal recipes explain the outcome of interest. The study adopts Ragin's (2008) perspective about the criticality of assessing asymmetric set relations instead of focusing on the net effects that variables, assumed to be linear and independent, may have on an independent variable.

More traditional statistical methodologies typically aim to measure how each independent variable contributes to explaining the variation that is observed in an independent variable. Such models are primarily intended to provide an evaluation of the net effects of independent over dependent variables. As Ragin (2008, p.112) states:

> *In conventional quantitative research, independent variables are seen as analytically separable causes of the outcomes under investigation. Typically, each causal variable is thought to have an autonomous or independent capacity to influence the level, intensity, or probability of the dependent variable.*

The idea of fsQCA is to establish causal recipes that lead to an outcome. Correlational methods are not very suitable for this task, particularly because the addition of interaction terms makes the task of interpretation very difficult, and also because the addition of interaction terms may lead to specification error, particularly when the number of observations in a dataset is small, as when performing qualitative case-based studies (Welch et al., 2011).

With fuzzy sets, a subset relationship exists when membership scores in one set, such as a combination of causal conditions, is less than or equal to the membership scores in another set, such the outcome. fsQCA is based on the idea that combinations of causal conditions, and not just one condition, are linked to the outcome. There may be several combinations of causal conditions that lead to the same outcome. This multiplicity of combinations of causal conditions leads to the notion, as described in Fiss (2007), of equifinality: that there may be several combinations of causal conditions which are sufficient for the outcome to occur. With fsQCA, the various combinations of causal conditions may be necessary or sufficient with respect to the outcome. By establishing necessity and sufficiency between causal conditions and outcome, implications for managers and policy makers become clearer.

Calibration

In fsQCA all data are calibrated into set membership values. These values range between 0 and 1, where 0 implies full non-membership and 1 full membership. Unlike crisp sets (where membership is zero or one), fuzzy sets contain values that are not necessarily at the extremes of the continuum. For this reason, at least a third value is necessary to express a crossover point which defines the point of maximum ambiguity and which defines a boundary for being in or out of a set. Thus, a link between causal condition and outcome is established if consistent membership in the outcome is linked to a consistent membership into a combination of causal conditions (Ragin, 2000).

Calibration of the outcome

The outcome of interest is speed of internationalization. This is normally measured as age at first entry or, in other words, the time elapsed since firm inception to first export. Although the notion of early internationalization is straightforward, its operationalization is not clear. How fast is fast is a matter of debate. Knight and Cavusgil (2005, p.16) define born global firms as "companies that, from or near their founding, obtain a substantial portion of total revenue from sales in international markets." This definition is in line with that of International New Ventures (see for example Oviatt and McDougall, 1994). The operationalization of "near" has several different interpretations. Knight, Madsen, and Servais (2004) define early internationalizers as firms that started to export within three years of their founding. Bloodgood, Sapienza, & Almeida (1996) use less than 5 years. Zahra, Ireland, & Hitt (2000) use 6 years or less. Shrader, Oviatt and McDougall (2000) use 6 years or less. Zhou, et al., 2007 use 3 years or less, although they refer to either exporting or importing. Perhaps these variations in operationalization derive from the inherent ambiguity of the concept, its fuzziness, if you will. That is why using fuzzy sets may prove particularly fruitful. Membership to the early exporters was calibrated by setting zero as the full membership score (i.e., firms that exported the very year of their inception) and setting 12 years as the full non-membership score of 0. The point of maximum ambiguity, that is the point that defines the boundary or qualitative separation between

being "in" or "out" of the set of early internationalizers, was fixed at 6 years (following Zahra et al., 2000 and Shrader et al., 2000). Continuous set memberships were defined with the log odds method outlined by Ragin (2008). Notice that firms are not being coded here into one or other category, such as fast internationalizers or slow internationalizers –as one would do if using crisp sets–, but establishing degree of membership into the set of fast exporters. Fuzzy sets allow doing this. In a sense, fuzzy sets allow establishing how far a firm is from one or the other extreme so that, thereupon, fuzzy set principles can be used to explore the questions of interest.

Calibration of causal conditions

As outlined above, there are 6 attitudinal variables of interest. Of these, four are directly related to the motivations of the entrepreneur, and two are related to the entrepreneur's perceptions of foreign markets and foreign market internationalization. The four motivational variables are: reception of unsolicited orders, underutilized capacity, exports by competitors, and small domestic markets. The two perceptual variables are the perceptions of risk, and the perception of profitability. Respondents were asked to assess the importance of these variables using scales and calibrated membership into the corresponding fuzzy sets by simply taking the highest possible score as the anchor for full membership, the smallest possible score as the anchor for full non-membership, and the scale's midpoint as the qualitative boundary that separates "in" from "out." The only observation here is that for the two perceptual variables the questions were reversed, in the sense that a high score meant that the entrepreneurs perceived much risk involved in exporting or that exporting was not profitable for the organization. Hence, in these last two cases, a score of one would mean full membership into the set of entrepreneurs that perceive exporting as a high risk activity, and similarly for profitability.

RESULTS

The first step was to examine whether there were causal conditions that could be considered necessary for the outcome. As mentioned before, a causal condition is necessary if it is shared across cases that exhibit a particular outcome. So, necessity is assessed by looking at cases with the same outcome (fast speed of internationalization) and see if there is a causal condition or a combination of causal conditions present in all cases. In this case, a test to see if any of the causal conditions, individually could be considered a necessary condition for the outcome was performed. With fuzzy sets, this implies that the set membership value of the outcome is smaller than the set membership value of the causal condition (Ragin, 2006). To do so, the procedure followed Ragin's (2006) suggestions and used consistency measures to investigate the degree to which the cases adhered to the specified rule (i.e., if the set membership value of the outcome is smaller than the set membership value of the causal condition). The consistency score suggested by Ragin (2006) measures how well cases follow this rule by determining how many cases do not meet the rule, and by how much they miss it. A consistency score of 1 means that the causal condition, or combination of causal conditions, meets the rules for all cases. When a consistency score exceeds 0.90, it indicates that the condition or combination of conditions is necessary. The causal conditions were tested for necessity, and the results are reported in Table 1. The consistency score is given by:

$$\text{Consistency } (Xi \leq Yi) = \sum_{i=1}^{C} \min(Xi, Yi) \Big/ \sum_{i=1}^{C} Yi$$

And the coverage rate of a causal condition Xi or a combination of causal conditions necessary for the outcome is:

$$\text{Coverage (Yi} \leq \text{Xi)} = \sum_{i=1}^{C} \min(\text{Xi, Yi}) / \sum_{i=1}^{C} \text{Xi}$$

Xi represents membership scores in a combination of conditions, Yi represents membership scores in the outcome, and C is the number of cases.

Table 1 reports the results of the fuzzy set analysis of early internationalization. This analysis was performed using the fs/QCA software package (Ragin, 2008). For simplicity, the names of the causal conditions of interest are abridged as follows: Unsolicited order: O; Exports by competitor: C; Small domestic market: M; Underutilized capacity: U; Export markets risky: R; Export markets not profitable: P.

Table 1. Test of necessary conditions for speed of internationalization.

Causal condition	Consistency	Coverage
Unsolicited order: O	0.27	0.79
Exports by competitor: C	0.51	0.81
Small domestic market: M	**0.94**	**0.80**
Underutilized capacity: U	0.25	0.84
Export markets risky: R	0.47	0.81
Export markets not profitable: P	0.18	0.84
R+P	0.47	0.81
~ R+~ P	0.91	0.76

~ stands for *negation*

The only consistent causal condition in Table 1 that exceeds the conventional 0.9 threshold is small domestic market. This causal condition can be considered necessary in the set of cases under scrutiny. A test for what Ragin (2006) calls "substitutable necessary conditions" in fsQCA was also performed (this is a test to investigate if two conditions which are operated by a logical "or" are a necessary condition for the outcome). The condition R+P ("there is too much risk in exporting" OR "Exporting is not sufficiently profitable for the organization") is inconsistent with the outcome. The OR operation on both causal conditions *negated*, however is consistent with the outcome, as shown in the last row of Table 1. This is consistent with the expectation that the outcome, rapid internationalization, would be associated to either a perception of exporting not being a risky endeavor or not being unprofitable. That the small domestic market is a necessary condition for the firms represented in the data set does not come as a surprise, because this condition has substantive support in the literature (Bell, 1995). Given that this is a necessary causal condition, one would wonder what other causal conditions can be linked to the outcome. This is done by exploring whether cases that share the same causal conditions also share the

same outcome, or, in other words, whether combinations of causal conditions, or causal recipes, are sufficient for the outcome. This is shown next.

To understand sufficiency, it is worth doing a brief comparison with crisp set analysis. A crisp set is one in which the causal conditions and the outcome assume only values of 0 or 1. In other words, in crisp sets cases either have full membership or non-membership into a set. Following this, it would be relatively straightforward, for a given set of causal conditions, to assess if the number of cases which belong to a certain combination of causal conditions (of 0s and 1s) share membership in the outcome (or are a subset of the outcome). Should it be so, then the combination would be deemed as sufficient. In fuzzy sets, however, cases may have partial membership in various causal conditions. As Ragin (2007) explains, one can see fuzzy sets that represent causal conditions as a multidimensional vector space with 2^k corners, where k is the number of causal conditions. With fuzzy set algebra, it becomes then possible to assess whether there is a subset relation between the causal conditions or combination of causal conditions and the outcome (Ragin, 2000).   Truth tables (Ragin, 2008) are used to assess how cases that have membership in a causal recipe may have membership scores that are less than or equal to the membership scores in the outcome (i.e. if there is a subset relationship). Truth tables are useful for summarizing fuzzy-set analyses. Truth tables list all possible configurations of the causal conditions. The rows of a truth table correspond to 2^k the corners of the vector space. With a truth table one can assess how the cases are distributed along these possible combinations of causal conditions. Since this paper uses using fuzzy sets, there is a varied degree of membership of each case on the different causal conditions. Therefore, one must assess how consistent the membership of a case or group of cases is for a given causal combination. It is important to note that unlike the crisp set contrast just described, in using fuzzy sets the truth table does not contain subset of cases. As Ragin (2007) explains:

> *When using a truth table to analyze the results of fuzzy set assessments, the truth table rows do not represent subsets of cases, as they do in crisp set analyses. Rather, they represent the 2^k causal arguments that can be constructed from a given set of causal conditions.*

The truth table shows the distribution of cases across all possible causal combinations and the number of cases with a membership score greater than 0.5 in each combination. After constructing the truth table using the fsQCA software, causal combinations that were subsets of the outcome were unveiled and evaluated in terms of consistency, using the consistency measure proposed by Ragin (2006) and also Verkuilen and Smithson (2006), and coverage.

Because there are 6 causal conditions, the truth table has 64 (2^6) rows, which correspond to the same number of "corners" in the vector space delimited by the different combinations of causal conditions. For the causal combinations described, there were cases with a membership greater than 0.5 in five of the sixty four possible causal recipes. A consistency cut off value of 0.837 was chosen. This value is larger than the recommended rule of the cut off value not being smaller than 0.75 (Ragin, 2007). Given the relatively small number of cases, a frequency cutoff value of 1 is used. Once this was done, the truth table was recoded as a dichotomy.

Once the frequency cut off value and the consistency threshold had been established, and the recoding was performed, the next step was to determine whether the causal recipes were a subset of the membership in the outcome. The procedure revealed the following:

SPEED OF INTERNATIONALIZATION ≥ (~U*M*~C*~R*~P) +(~O*~U*M*~C*~P) + (O*U*M*~C*R*P)

The truth table analysis shows that there are three paths or causal recipes that lead to the outcome. The solution coverage is equal to 0.68, and the solution consistency is equal to 0.84. As Ragin (2006) explains, consistency evaluates the degree to which the cases that share a particular combination of causal conditions also display the outcome (i.e. fast internationalization). Coverage evaluates to what extent the combination of causal conditions account for instances of the outcome. Coverage is, therefore, a measure of how important or relevant the solution is.

In dealing with sufficiency, consistency is given by (Ragin, 2007):

$$\text{Consistency } (Xi \leq Yi) = \sum_{i=1}^{C} \min(Xi,\, Yi) \Big/ \sum_{i=1}^{C} Xi$$

And coverage is given by (Ragin, 2007):

$$\text{Coverage } (Xi \leq Yi) = \sum_{i=1}^{C} \min(Xi,\, Yi) \Big/ \sum_{i=1}^{C} Yi$$

Xi represents membership scores in a combination of conditions, Yi represents membership scores in the outcome, and C is the number of cases.
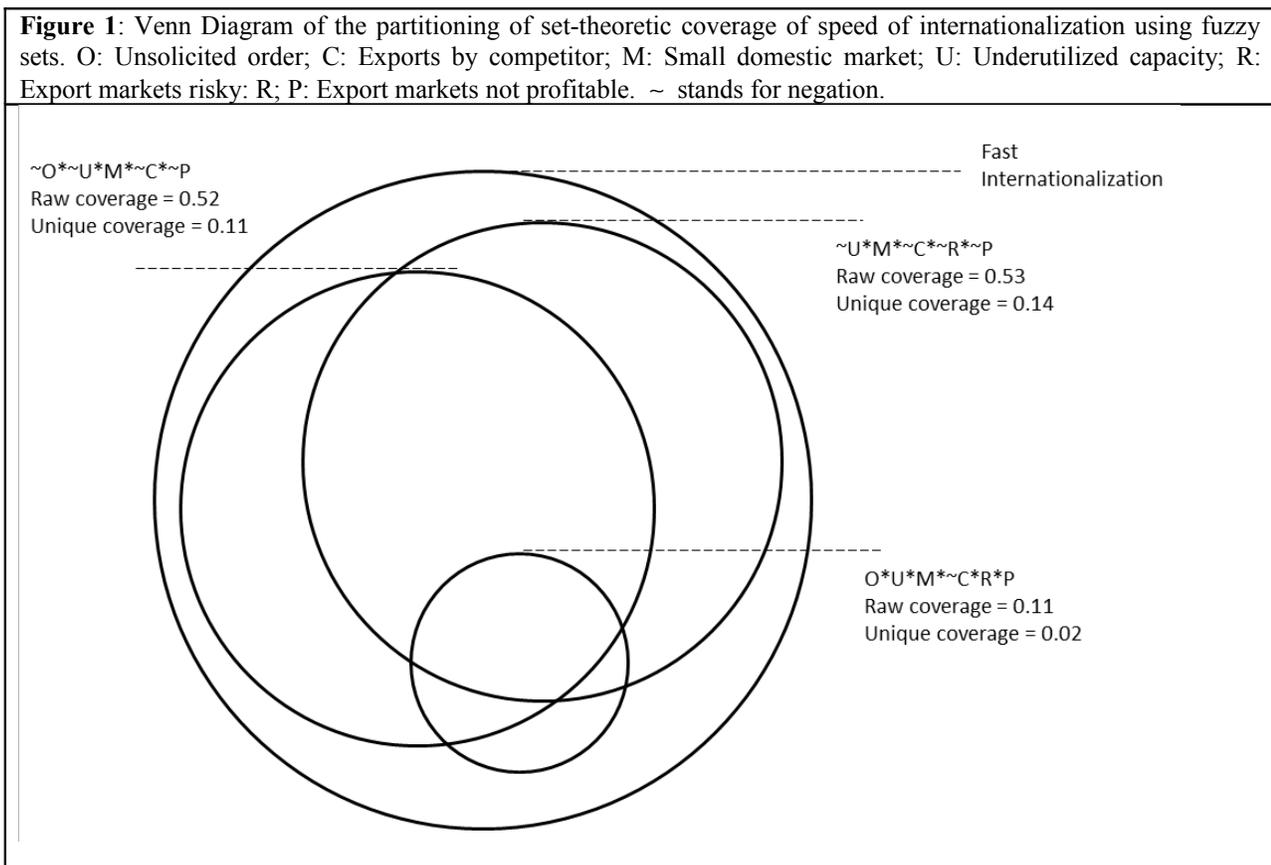
Coverage and consistency of the three causal paths is presented in Table 2. In this case, all combinations of conditions are consistent subsets of the outcome. Table 2 partitions the solution coverage to assess the relative importance of the different causal combinations. Raw coverage indicates the fraction of instances of the outcome that are embraced by the causal recipe. The raw coverages of the three causal recipes identified in the complex solution are 53%, 52%, and 11% for causal recipes I., II., and III., respectively. Coverage can be partitioned to assess the coverage that is unique to one particular causal path. For the three causal paths, unique coverages are 14%, 11% and 2% respectively. The difference between the two is because of overlapping.

Table 2. Consistency and coverage of causal paths for complex solution to speed of internationalization.

	Causal path	Raw coverage	Unique coverage	Consistency
I.	~U*M*~C*~R*~P	0.53	0.14	0.85
II.	~O*~U*M*~C*~P	0.52	0.11	0.91
III.	O*U*M*~C*R*P	0.11	0.02	0.97

~ stands for *negation*

Figure 1 is a Venn diagram of the results. The largest circle in the diagram represents the set of cases that show membership in the outcome, and the smaller circles inside represent the cases that exhibit membership in a particular combination of causal conditions and also in the outcome. The diagram illustrates, approximately, which coverage of the outcome is uniquely due to any one of the causal combinations. Keep in mind that the purpose of this analysis is to describe the set theoretic relationships between causes and outcome. Measures of coverage and consistency are not intended as inferential tools. They are descriptive tools. The Venn diagram insinuates the existence of interesting, or at least different typologies for rapid internationalization. The diagram also hints at firms leaning more toward one combination of these causal conditions than to some other (or, said differently, more toward one of the corners of the 2^k space created by the k causal conditions); and it also signals that there is a limited number of consistent combinations.

Figure 1: Venn Diagram of the partitioning of set-theoretic coverage of speed of internationalization using fuzzy sets. O: Unsolicited order; C: Exports by competitor; M: Small domestic market; U: Underutilized capacity; R: Export markets risky: R; P: Export markets not profitable. ~ stands for negation.

~O*~U*M*~C*~P
Raw coverage = 0.52
Unique coverage = 0.11

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~U*M*~C*~R*~P
Raw coverage = 0.53
Unique coverage = 0.14

O*U*M*~C*R*P
Raw coverage = 0.11
Unique coverage = 0.02

The small market motivation for exporting is present in all three causal paths, but the solutions are different. The first path shows that speed occurred in some of the cases motivated primarily by the limitations of a small domestic market and the absence of underutilized capacity, in the absence of influences of competitor exports, in the absence of a perception of exporting being risky, and also in the absence of a perception of exporting being unprofitable for the organization. In this case, firms are moved by the small market limitations and the perception of not risky and not unprofitable. Receiving unsolicited orders is a "don't care" condition. This causal path is very much like the usually portrayed causal combination that purportedly leads to fast internationalization: entrepreneurs see a constraint in the limitations of the local market and

thus become international without any impairment coming from any perception of risk or unprofitability, and also in the absence of any other fortuitous or competitive pressure. This behavior could be interpreted as purely entrepreneurial.

The second causal path is similar, but in this case, unexpectedly, the perception of risk associated to exporting is a "don't care" condition. These firms are primarily moved by the limitations of the small market and the perception of exporting not being unprofitable, but risk does not seem to play a role. This is quite surprising, as fast internationalizing is often associated to risk prone behavior. For instance, McDougall and Oviatt (2000) have defined international entrepreneurship as "…a combination of innovative, proactive, and risk-seeking behavior that crosses national borders and is intended to create value in organizations." Yet, in this case, it seems to be profitability, irrespective of the perceived risks associated to aggressive exporting, what moves these firms to internationalize fast. This is interpreted as a more calculated decision to internationalize, one in which the firm seeks foreign markets based on a perception of profitability.

The third causal combination is even more counterintuitive, because here the causal recipe combines perceptions of export markets being risky and unprofitable, and speed being   linked to small market limitations and also by the reception of unsolicited orders and having underutilized capacity. Again, this appears to be a causal recipe in which firms are moved to export more based on fortuitous events (such as the reception of an unsolicited order that can be fulfilled with extant capacity), or by the pressures of a small domestic market. This solution shows a much more passive or reactive causal combination in which entrepreneurs, despite perceiving exporting as risky and unprofitable, do enter foreign markets early, but somewhat accidentally, either because an order was received (hence risk becoming mute) or imitating the behavior of competitors (hence risk and profits becoming secondary).

The three solutions present subtle but important differences in the causal recipes that lead to fast internationalization. The first one would reveal an entrepreneur that actively seeks to minimize the limitations imposed by a small domestic market by venturing abroad, as postulated by scholars of international entrepreneurship (Kuivalainen et al., 2007; Shepherd and Tienne, 2005; Dimitratos et al., 2010; Javalgi and Todd, 2011). The second would portray an entrepreneur assessing entry to overcome the limitations of a small local market based primarily on a perception of profitability and where risk plays no role. Although some scholars pointed the importance of economic determinants for internationalization, this configuration is more in line with the international business literature studying multinational enterprises than with research on INVs and BGs. (Knight and Cavusgil, 1996; Moen, 2002; Rugman et al., 2011). The third solution would fall more in the accidental, imitative behavior, or reactive, behavior of the entrepreneur, which is more consistent with studies of internationalization as the result of serendipitous events (Crick and Spence, 2005; Jones and Coviello, 2005)

The causal combinations presented here so far comprise the "complex" or detailed solution (Ragin and Sonnett, 2004). In this case the solution incorporates only the observed combinations of causal conditions. Those combinations that do not have any occurrence are just excluded (they are considered to be "reminders.") A parsimonious solution can be obtained by incorporating into the process other combinations of causal conditions. Similarly, an intermediate solution is derived by incorporating into the analysis "easy-counterfactuals" (see Ragin, 2008). The complex or detailed solution is a subset of the intermediate solution, and the intermediate solution is, in turn, a subset of the parsimonious solution. The parsimonious solution was "too parsimonious" as it incorporates only one causal condition (small local market). The intermediate solution, however, is a bit more illustrative, particularly because it highlights previous observations about the perception of

risk. In order to generate the intermediate solution, counterfactuals, which are based upon substantive theoretical knowledge, were introduced. The assumptions are that the absence of a perception of risk, the absence of a perception of foreign market not being profitable; and the presence of small market limitations, unsolicited orders, underutilized capacity, and exports by competitors should contribute to the outcome. These assumptions rest solidly on previous theoretical knowledge (Crick, 2009; Bell, 1995; Dimitratos and Jones, 2005; Ellis, 2000; McDougall and Oviatt, 2000; Madsen and Servais, 1997; Knight and Cavusgil, 2005; George, 2011; Zahra, 2005) . The intermediate solution thus generated is as follows (solution coverage=0.88; solution consistency = 0.81).

SPEED OF INTERNATIONALIZATION $\geq$ $(M*{\sim}P~) +(O*U*M) = M * ({\sim} P + (O+U))$

This solution shows two paths. In both cases M is a necessary condition. In the first path fast internationalization is driven by the perception of export markets not being unprofitable, and in the other case by just the reception of unsolicited orders or the presence of underutilized capacity. The perception of risk is, in both paths, a "don't care" condition.

The analysis was concluded by examining plausible configurations leading to *not* fast internationalization. Remember here that in using QCA, there is a departure from the traditional correlational based symmetric understanding of causality as asymmetry is assumed. This means that the causal recipe that leads to the absence of the outcome may be entirely different. A fuzzy set analysis modeling *not* fast internationalization using the same set of causal conditions revealed results that were not particularly illuminating as there was only one instance which exhibited a consistent membership in one corner of the vector space of the said causal conditions that led to the outcome of not fast internationalization.

CONCLUSION

The fuzzy set qualitative comparative analysis performed to investigate the relationship between certain attitudinal variables and speed of internationalization shows a number of typologies of fast internationalizers. The typologies uncovered can be linked to the main arguments of the literature streams that have examined BGs and INVs. This study uncovers causal recipes for fast internationalization that are somewhat counterintuitive. One causal configuration is very much in line with what we would expect from extant literature: given a motivation, such a small domestic markets, entrepreneurs will show an aggressive export stance, while perceiving export markets as not being risky or unprofitable, and while acting proactively (i.e., in the absence of an unexpected order or just to use installed capacity). But there are other two configurational types that show differences. One type appears to be moved to overcome the small market limitations solely by the perceptions of those markets not being unprofitable, disregarding of risk – a combination of factors that has been observed by scholars of multinational corporations, which rely on a more structured and multi-layered decision making process and are not affected by the same level of resource constraints (and hence risk) as small entrepreneurial firms (Rugman et al., 2011). In fact, internationalization as a result of small domestic market and profit opportunities abroad is more consistent with the gradual internationalization perspective than with the theories of BG and INV (Johanson and Vahlne, 1990; Zahra, 2005)

A third typology shows a much more reactive type that sees risk and unprofitability in export markets, sees domestic market limitations, but for whom the reception of unsolicited orders or moves by competitors are part of the recipe for becoming fast internationalizers. This is somehow consistent with the idea of serendipity affecting international

entrepreneurship (Coviello and Jones, 2005). Yet, this conjugation of causal conditions combines elements of serendipity with a perception of riskiness in internationalizing, and awareness of domestic market limitations.

This study advances the research agenda on international entrepreneurship by exploring different configurations of fast internationalizing firms. The study uncovers typologies and links them to different theoretical streams, illustrating that entrepreneurial firms can be fast internationalizers for different combinations of reasons. This study responds to calls for the use of Qualitative Comparative Analysis in international business (Welch et al., 2011), and, hence, this study may contribute to the development of a new research stream on INVs and BGs, which, by accepting the existence of multiple causality, will link different theories to explain the divergence in results found in symmetrical empirical studies of fast internationalization. This study is exploratory due to its limitations. For instance, the large overlap found in the causal recipes suggests that additional variables might be needed for obtaining cleaner typologies. Our measures, being single variable, may be prone to measurement error. One possible avenue for further research would be gathering data related to entrepreneurial attitudinal variables based on multi-item scales to add to the validity of the results that this research suggest. Another possible avenue is to replicate the study by examining low tech firms and firms that internationalize slowly, as to develop a more refined set of configurations explaining internationalization speed.

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