

**SPEED OF INTERNATIONALIZATION: CONCEPTUALIZATION, MEASUREMENT
AND VALIDATION ¹**

Sylvie Chetty

University of Otago/Uppsala University

School of Business

Centre for Entrepreneurship, PO Box 56, Dunedin (New Zealand)

Tel.: +64 3 479 8147; Fax: +64 3 479 8171

Email: sylvie.chetty@otago.ac.nz

Martin Johanson

Mid Sweden University/ Uppsala University

Department of Business, Economics and Law/ Department of Business Studies

851 70 Sundsvall (Sweden)

Tel.: +46 60 148474; Fax: +46 018 4716810

E-mail: martin.johanson@miun.se

Oscar Martín Martín²

Public University of Navarre/ Uppsala University

Business Administration Department/ Department of Business Studies

Campus Arrosadía s/n, 31006 Pamplona, Navarre (Spain)

Tel.: +34 948166082; Fax: +34 948169404 E-mail: oscar.martin@unavarra.es

¹ All authors have contributed equally to this manuscript.

² Corresponding author

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ABSTRACT

To better manage and understand the speed at which firms internationalize, managers and scholars need an appropriate conceptualization and a reliable and valid measure of speed of internationalization. The literature, however, adopts a limited temporal perspective and usually conceptualizes and measures it as the time it takes the firm to start to internationalize. This unidimensional view neglects the central aspects of internationalization that create speed. Our purpose is, therefore, to propose a new, theory-driven – embedded in the main concepts of the original Uppsala model – and multidimensional conceptualization and operationalization. The main contribution is that we develop this conceptualization and measure.

Keywords:

Speed of internationalization; market knowledge; market commitment; international performance; small and medium-size enterprise.

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INTRODUCTION

Speed of internationalization is an important issue for both managers entering and expanding international markets and international business (IB) researchers. From a managerial point of view, firms have to decide the speed at which to develop internationally. This speed is a key aspect of firms' international strategy and should balance firm resources and international opportunities. Managers allocating the resources required to seize international opportunities will expect faster and more sustainable internationalization. Speed of internationalization is, therefore, an important managerial challenge that firms face in their decision making. This is particularly relevant for small and medium size enterprises (SMEs), since they have limited resources and need to use these efficiently. Indeed, Chetty and Campbell-Hunt (2003a) found that rapid international growth that occurs suddenly can be destabilizing for SMEs as their resources are stretched and their configuration of capabilities are challenged. Furthermore, managers have to consider the potential linkages between speed of internationalization and performance (Vermeulen & Barkema, 2002; Wagner, 2004) since varying speed of expansion will lead to different international performance.

As indicated, the issue is also important from an academic perspective. In fact, the emerging literature on born globals (Knight & Cavusgil, 2005) suggests that firms internationalize with a higher speed than they used to do when the incremental approach, also known as 'Uppsala model' (Johanson & Vahlne, 1977), was proposed. Surprisingly, the concept of speed of internationalization is under researched (Casillas & Acedo, 2013) and scholars have provided little guidance for firms about how to manage and measure speed of

internationalization. We argue that this lack of guidance mirrors the limitations and embryonic situation of research on speed and related constructs. Decision makers and scholars need a conceptualization of speed of internationalization that is based on a sound theoretical platform, and a reliable and valid operationalization. This is a vital prerequisite to make progress in internationalization research with new studies integrating speed into internationalization models and uncovering determinants and outcomes of speed.

Despite its importance, there are limitations with how the extant literature conceptualizes and measures speed of internationalization. If speed is defined as distance divided by time, then the content validity of most measures can be questioned since scholars generally refer to speed as the time it takes to internationalize from inception of the firm (e.g., Chetty & Campbell-Hunt, 2004; Zahra, Ireland, & Hitt, 2000). On the one hand, the general conceptualization and measurement of speed implies a *limited temporal perspective* because only the time between inception and start of internationalization is considered and measured, but not the subsequent period once internationalization starts. On the other hand, referring to speed solely as time (the time it takes to internationalize) discards the central aspects of the internationalization process of firms (such as market knowledge and commitment), i.e., the numerator of the definition of speed. This implies a *unidimensional view* on speed of internationalization, and thus cannot fully capture the complexity of speed and how changes in key internationalization constructs create speed.

Two exceptions to the limited temporal perspective and unidimensionality are Oviatt and McDougall's (2005) and Casillas and Acedo's (2013) views on how speed of internationalization should be conceptualized and measured. Although we will discuss their views in the next section, we highlight that their work is conceptual without empirically testing an alternative measure. Vermeulen and Barkema (2002) and Wagner (2004) also go beyond only time-based views on speed and measure it as the number of foreign subsidiaries divided by number of years since the

firm's first foreign expansion, and change in foreign subsidiary sales-to-total sales ratio. These measures are suitable in surveys of large multinational corporations but are impractical when dealing with less internationally developed and committed firms.

In light of the importance of speed of internationalization and the limitations of its conceptualization and measurement (Casillas & Acedo, 2013), this study takes a comprehensive ('time scope') and multidimensional ('content scope') perspective. In particular, we refer to speed of internationalization as the firm's average rate of international expansion, that is, the state of the firm's internationalization (Johanson & Vahlne, 1977; 2009) for each year of its existence (time). By examining the state of internationalization in relation to time, we are able to study the (multidimensional) speed at which the firm internationalizes, and not limit it in (time) scope to the early phase (born globals) or later phase (traditional firms). Thus we provide an alternative conceptualization and operationalization of speed based on its etymological roots and how it is defined and used in physics, and in established internationalization process theory (the Uppsala model).

Internationalization theory, particularly the Uppsala model, has been progressively adapted to network theory and a business network model of internationalization (Johanson & Vahlne, 1990; 2003; 2006; 2009). Although "the basic structure of the model is the same" (Johanson & Vahlne, 2009, p. 1424) as the one published in 1977, for the sake of parsimony and simplicity, we limit our operationalization of speed to the original model of knowledge development and increasing foreign market commitments (Johanson & Vahlne, 1977). Speed, as a dynamic aspect linking the state of internationalization (Johanson & Vahlne, 1977) with the time elapsed to achieve it, can be therefore measured as the speed of gaining international market knowledge (learning) and committing internationally since the firm has been operating in business. Our objective is to develop the first conceptualization and measure embedded in the main concepts of

the original Uppsala model and that can stimulate debate, as well as new conceptualizations and measures in future studies. We check the external validity of the measure by empirically testing the relationship between speed of internationalization and international performance. We contribute to the internationalization literature by developing and validating this theory-based construct and measure. We address a research gap on the content validity of measures of speed of internationalization which are disconnected from internationalization theories and, overall, have a limited temporal perspective and only rely on time. We also add to the discussion and development of constructs addressed to capture the dynamics of firms' international expansion.

SPEED AND INTERNATIONALIZATION OF THE FIRM

To capture the phenomenon of early and rapid internationalization, IB researchers introduced concepts like speed (e.g., Wagner, 2004), pace (e.g., Vermeulen & Barkema, 2002), rapid (e.g., Freeman, Edwards, & Schroder, 2006), accelerated (e.g., Pla-Barber & Escribá-Esteve, 2006), etc. Most of them were important concepts in natural science and they had established definitions and meanings, which were specified a long time ago. Probably the most frequently used term is speed (e.g., Acedo & Jones, 2007; Oviatt & McDougall, 2005). The roots of the word speed are found in Old English, Middle Dutch and Old High German languages and it has two main meanings. The first meaning is success, prosperity and fortune. The second meaning, which is of more interest here, refers to swiftness or rapidity and the rate of motion and movement of things (Oxford English Dictionary, 1989). In physics speed refers to an object's change of position or its movement. Speed includes the time it takes to travel a specific distance. In the internationalization and born global literature, speed of internationalization (Acedo & Jones, 2007; McDougall, Oviatt, & Shrader, 2003) is a key concept that is often discussed. We have therefore reviewed recent literature in these areas that either empirically measures or theoretically

suggests measurements of ‘speed’ or similar concepts (see Table I). Some conclusions appear below.

INSERT TABLE I ABOUT HERE

We frame a research problem by examining the definition of speed in the extant literature. Most studies lack a clear definition and discussion about the nature or content of the concept but refer to speed as the ‘time to internationalization’. This is especially striking for the born global studies, where ‘early’, ‘time’ and ‘speed’ are core aspects of this approach (Acedo & Jones, 2007; Weerawardena, Mort, Liesch, & Knight, 2007). Overall, there is a lack of conceptualization where the concepts are linked to internationalization theory. For instance, Vermeulen and Barkema (2002, p. 640) discuss “time compression diseconomies” to justify *the effects* of foreign expansion pace without elaborating on *why* they use their specific conceptualization and operationalization. Similarly, Wagner (2004) also focuses on *the effects* of internationalization speed but neglects to justify the concept and measure. Oviatt and McDougall (2005) also lack a clear definition of internationalization speed although they propose to measure it based on three indicators (see Table I). Finally, Casillas and Acedo (2013) provide a novel and multidimensional definition and operationalization. Since these two more recent studies are conceptual, their suggested measures still have to be validated. Our conceptualization and operationalization of speed addresses these gaps in the literature by linking speed to established internationalization process theory.

Most articles develop and test hypotheses on the role of speed and the main interest is to discover what causes the firm to internationalize at a high speed (see columns 5 and 6 in Table I). Nevertheless, all studies that treat speed as a dependent variable measure it as the time from

inception to when the internationalization process begins as well. The antecedents can be divided into four groups of independent variables: Characteristics of the entrepreneur and management (Acedo & Jones, 2007; Luo, Zhao, & Du, 2005; Pla-Barber & Escribá-Esteve, 2006; Zuchella, Palamar, & Denicloai, 2007), network of relationships and ties (Khavul et al., 2010; Kiss & Danis, 2008; Musteen, Francis, & Datta, 2010; Pla-Barber & Escribá-Esteve, 2006), institutions and technology in the foreign market (Coeurderoy & Murray, 2008; Kiss & Danis, 2008; Luo et al., 2005), and, firm strategy (Zuchella et al., 2007; Pla-Barber & Escribá-Esteve, 2006; Freeman et al., 2006). Only six studies have a measurement with a 'long-term' perspective (see column 7) on internationalization (Casillas & Moreno-Menéndez, 2013; Chang & Rhee, 2011; Chen & Yeh, 2012; Ramos, Acedo & Gonzalez, 2011; Vermeulen & Barkema, 2002; Wagner, 2004) and five empirical studies discuss speed as an independent or moderating variable.

Referring to these five empirical studies, the seminal article by Vermeulen and Barkema (2002) hypothesizes that a faster expansion pace negatively moderates the effect of a firm's foreign subsidiaries on its profitability. Speed is measured as the number of foreign subsidiaries divided by the number of years since the firm's first foreign expansion and, alternatively, as the number of years since the firm's first foreign expansion. The first of these measures has limited practical use beyond MNCs because it only applies to firms expanding through subsidiaries (the average firm in their sample had established 34 subsidiaries) and the second is only time based (unidimensional). Wagner (2004), drawing on Vermeulen and Barkema (2002), proposes that the relationship between expansion speed and cost efficiency exhibits an inverted-U curve and proxies internationalization speed with change in foreign subsidiary sales-to-total sales ratio. Hence, this operationalization of speed precludes the application of their measure beyond MNCs as well. Although Chen and Yeh (2012) also use a 'long-term' perspective, they focus on FDI pace and their measure is unidimensional, i.e., only time based. While Khavul, Pérez-Nordtvedt

and Wood (2010) hypothesize that speed (age at which the firm had its first international sale) has a positive effect on general performance of the firm, they did not find empirical evidence on a sample of INVs from emerging countries. Finally, Chang and Rhee (2011) found a positive relationship between speed of FDI expansion (a ratio of number of subsidiaries and time) and performance.

Since speed as a concept is highly relevant in the theories on international new venture and born globals, time to internationalization is frequently used as a criterion of sample selection in empirical studies of such firms (e.g., Chetty & Campbell-Hunt, 2004; McDougall, Shane, & Oviatt, 1994; Zahra et al., 2000). In addition, the majority of the empirical studies use a sample of SMEs that are rather young and related to high-technology industries. In this review, only six articles (Casillas & Moreno-Menéndez, 2013; Chang & Rhee, 2011; Lin, 2012; Pla-Barber & Escribá-Esteve, 2006; Vermeulen & Barkema, 2002; Wagner, 2004) analyze internationalization speed based on a sample of companies of different size and with different degrees of internationalization. The other studies could be considered to be part of the international new venture or born global paradigm. Furthermore, five articles are conceptual (Casillas & Acedo, 2013; Kiss & Danis, 2008; Oviatt & McDougall, 2005; Prashantham & Young, 2011; Weerawardena et al., 2007) and there are only two based on qualitative data (Freeman, Edwards, & Schroder, 2006; Lee, Abosag, & Kwak, 2012).

Based on this review, we can conclude that the vast majority of studies where speed is actually measured lack a theoretical foundation in their conceptualization and tend to have a limited temporal perspective and unidimensional view on speed and internationalization. By focusing solely on the relationships of speed and on the period before internationalization starts and only on time we obtain a narrow view of the dimensionality and complexity of speed.

CONCEPTUALIZATION AND VALIDATION OF SPEED

Conceptualization of Speed of Internationalization

Since the established conceptualization and operationalization of speed as time to internationalization lacks a solid theoretical background and has limited content validity, there is a need to develop more suitable conceptualizations of the term which can reflect its true nature. We use the pure meaning of the term so that speed has two components: time and distance. We define speed as a relationship between the internationalization distance covered and the time passed to reach this. We conceptualize the distance covered as the firm's current state of internationalization¹ (Johanson & Vahlne, 1977). In the internationalization process literature this has a distinct meaning as it refers to the firm's knowledge (mostly experiential) about international markets (Barkema, Bell, & Pennings, 1996; Eriksson, Johanson, Majkgård, & Sharma, 1997; Johanson & Wiedersheim-Paul, 1975) and to the firm's commitment to international markets (Johanson & Wiedersheim-Paul, 1975).

The firm's experiential knowledge gained from operating internationally is a critical aspect of its state of internationalization. While this knowledge gives the firm competitive advantage to operate internationally, it is the main ingredient in the firm's knowledge about international markets as well (Luo & Peng, 1999). The experience gained from international activities *during a specific time period* can be assumed to correspond to the firm's speed of international learning. Internationalization does not have a specific end; it is a dynamic process (Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977; 2009; Papadopoulos & Martín Martín, 2010) developed through successive time periods.

¹ Since we conceptualize the distance covered as the firm's current *state* of internationalization, the *change aspects* (commitment decisions and current activities) and the 'patterns of internationalization' (psychic distance and the establishment chain or 'stages') that the mechanism of internationalization can explain (Johanson & Vahlne, 1990; Johanson & Wiedersheim-Paul, 1975) are not part of the domain content of the new conceptualization.

The speed of gaining experiential knowledge about international markets (speed of international learning) comes from accumulating two types of experience during a specific period of time (Barkema & Vermeulen, 1998). In line with previous research, we argue that experience is gained by conducting business in different markets (Johanson & Vahlne, 1977). Since markets tend to be heterogeneous, this denotes that firms' learn more from facing different business conditions than when the conditions are the same. Diversity allows reflection and comparison, and so the firm simultaneously faces new experiences, which can be compared with previous experiences to choose the one that matches its current strategy. Furthermore, one of the prerequisites for efficient learning is the potential for repetition. While gaining experience and putting the experiential knowledge into use, the firm can test, modify, reject and adapt the experience to suit its need in internationalization. Of particular importance is duration and repetition of the firm's business with foreign markets. Consequently, the more experiential knowledge, in terms of diversity and repetition, gained during a specific period of time, the bigger the contribution to the speed of internationalization.

International commitment leads to the firm's dependence on foreign markets as it invests resources elsewhere instead of the domestic market (Johanson & Vahlne, 1977). The 'Uppsala model's' definition of commitment incorporates two aspects. The amount of resources invested in a specific foreign market and the lack of transferability of these resources to other markets (Johanson & Vahlne, 1977). Several reviews of the literature demonstrate (Da Rocha, Cotta del Mello, Pacheco, & de Abreu Farias, 2012; Tan, Brewer, & Liesch, 2007; Sharma, Young, & Wilkinson, 2006) that commitment is now usually viewed as being more multifaceted and containing 'softer' and tacit resources, like attitudes, emotions, skills and human resources and capital (e.g., Freeman & Cavusgil, 2007; Javalgi & Todd, 2011; Nadkarni & Perez, 2007). Nevertheless, these different approaches share a common argument that the committed resources

are likely to lose value when the firm moves to other markets, which is in line with the original definition of commitment by the Uppsala model.

Speed of committing internationally relates to *international commitment* and *time* so it refers, for instance, to the amount of human capabilities the firm invests in international activities during a specific period of time. Thus, a firm internationalizing at high speed is expected to devote more employees with competence to perform international operations during a specific period of time than firms internationalizing at low speed. In addition, firms invest in other resources such as legal entities in foreign markets. The more resources are committed to legal entities in international markets the bigger the international commitment. This denotes that the larger the magnitude of resources committed internationally during a specific period of time the higher the speed of internationalization.

In conclusion, the main forces creating speed of internationalization are speed of gaining experiential knowledge (speed of learning) and committing resources during a specific period of time. Put simply, speed of internationalization is conceptualized as a formative higher-order construct (Jarvis, Mackenzie, & Podsakoff, 2003) created by these two dimensions. In fact, the four decision rules proposed by Jarvis et al. (2003) to decide whether a construct should be formative or reflective point in this direction. First, the direction of causality implied by the conceptual definition is from the dimensions to the construct since speed of internationalization is created by speed of learning and speed of committing internationally, and changes in the dimensions should cause changes in the construct. Second, the dimensions do not need to be interchangeable. It is clear that dropping one of them would alter the conceptual domain of the construct, i.e., speed of internationalization would become just a measure either of speed of learning or of speed of committing internationally. Third, it is not necessary for the dimensions to covary with each other. That is, a firm could reach high speed of learning without necessarily

committing internationally and vice versa. Finally, the nomological net differs for the dimensions since the determinants of speed of learning and speed of committing internationally can be considered to be different. In light of these four criteria, and consistent with Casillas and Acedo's (2013, p. 12) conclusion that studies can be "enriched by considering speed as a multidimensional and formative construct", we determined that speed of internationalization should be 'formative'. By speed of gaining international knowledge we mean speed of international learning through repetition as well as diversity of international activities since the firm's inception. Speed of committing resources internationally is conceptualized as a relationship between international commitment and the time elapsed since the firm's inception.

External Validation

In the process of building a formative measure, the final step is its empirical testing in connection with another construct with which it is expected to correlate (Diamantopoulos & Winklhofer, 2001). We use international performance to create a nomological network of relationships and to externally validate the measure of speed. Casillas & Acedo (2013, p. 11) concluded that speed "should be considered as an important determinant of performance" and we argue that speed of internationalization has a positive association with international performance. This relationship can be supported by the following theoretical arguments.

First, as Chetty and Campbell-Hunt (2003b, 2004) found, the increased scale of operations resulting from internationalization can drive competitive advantage. The increased scale of operations leads to higher efficiency of resources, leveraged in different markets and activities. By entering more markets at a higher speed the firm can decrease its costs faster because overhead costs can be spread over more markets and units, and economies of scale can reduce production costs (Chetty & Campbell-Hunt, 2003b). A high speed of committing resources to

foreign markets provides a platform for the firm to develop relationships with agents, distributors and customers in some markets (Chetty & Campbell-Hunt, 2004; Freeman, Edwards, & Schroder, 2006), while it can start up production subsidiaries or sales organizations in others. The quicker the firm achieves this, the quicker it can improve efficiency and gain closeness to key actors in the foreign markets. We expect this to have a positive effect on the firm's competitive advantage and international performance.

Second, a high speed of internationalization allows the firm to exploit slender windows of opportunity to acquire first mover advantage (McNaughton, 2003), which leads to higher international performance than other firms (Rialp, Rialp, & Knight, 2005). The literature is clear that opportunities lead to innovations and that these bring about competitive advantage. A distinctive characteristic of SMEs is the role that innovation plays in their internationalization process and in building their competitive advantage and subsequently international performance (Chetty & Campbell-Hunt, 2003b). More recently, Raymond and St. Pierre (2011) also found that the best performing SMEs focused on innovation. These studies show that an innovation with global potential provides the opportunity to launch into several markets quickly. In internationalized firms, this also makes it possible to transfer competencies, innovations, knowledge and resources between units located in different markets (Kogut & Zander, 1993). An opportunity seized in one market may require resources and competences from other markets in order to be exploited. These issues relating to first mover advantage, innovation, and knowledge and resource transfer point to a relationship between speed of internationalization and international performance.

METHODS

Sample and Data

The empirical study focuses on small and medium-sized firms as defined by the European Commission (2003/361/EC) in terms of employees and turnover (a large majority of firms in the EU are SMEs). We used stratified random sampling (firms were stratified by size) and obtained a representative sample of 178 small and medium-sized enterprises (SMEs) from the census of 386 internationalized SMEs with ten or more employees located in a Spanish region (Navarre). A total of 170 usable responses were included in the analyses. The firms were listed in a directory of the local Chamber of Commerce. All were manufacturers and regular exporters (i.e., firms exporting continuously since they started) representing a cross-section of nine industries offering both consumer and industrial products. The sampling method is distinctive because only 9.3% of articles in the leading international business journals have used probabilistic sampling (Yang, Wang, & Su, 2006). Although it was not a stratification criterion, the sectoral distribution of the sample was also representative of the population across industries.

Most firms (117 or 68.8%) are small, while 53 are medium-sized, with the mean number of employees being 49.3. The mean values of their assets amount to 7.5 million Euros and the presence of foreign capital in their equity is limited (8.7%). These SMEs have been regular exporters for almost 13 years, and on average have entered close to 10 countries. Their exports (2.2 million Euros) account for over one fourth of their total sales (8.2 million Euros).

Questionnaire and Field Research

The questionnaire focused on firm and managers' characteristics, international strategy and firm performance in foreign markets. The questionnaire content and design were pretested for face validity in two stages. First, six researchers or business consultancy experts reviewed an initial

draft. Then, after minor modifications, a revised draft was tested on five firms through personal interviews with the executives in charge of foreign operations. As a result, some items were refined and some questions were omitted to reduce completion time.

Data were collected through personal interviews with the international or general manager in charge of the firm's foreign business activity. The field research took about eight months and the average duration of each interview was one hour fifteen minutes. The participation rate was close to 65% of firms contacted. We carried out tests for non-response bias (Armstrong & Overton, 1977) by means of the variables resources (number of employees) and internationalization (international on total sales) and found non-significant differences. We also tested early and late response bias and found non-significant results in the mean scores of the indicators.

In an attempt to avoid the risk of common method variance bias associated with cross-sectional research designs (Chang, van Witteloostuijn, & Eden, 2010), the sets of indicators and questions used to externally validate the measure were separated in the questionnaire and different response formats and scales were employed (see Table II). In addition, we obtained four measures from secondary information sources: 'Total assets', 'number of employees', 'foreign equity' and 'ISO 9000'. We also implemented post hoc statistical procedures to diagnose and alleviate potential common method biases. First, we carried out a Harman's one-factor test and, therefore, checked the dimensionality of the indicators used to validate the measure in an exploratory factor analysis (EFA). We obtained five factors with eigenvalues greater than 1 that accounted for between 24.6 and 11.6% and explained 80% of the variance. Second, we used whether or not the firm had implemented an ISO 9000 quality management system as a marker variable and found 'marginal' and non-significant correlations between the 'marker' and the two constructs in the model (0.045 with speed of internationalization and 0.079 with international

performance). Furthermore, the structural relationship between speed of internationalization and international performance (and its significance) is similar (a decrease of 0.001 in the structural path value) with and without this measure in the model. In light of the research design and the statistical procedures explained above, we conclude that the sample appeared to be free of this potential limitation.

INSERT TABLE II ABOUT HERE

Measures

Measurement of Speed of Internationalization. The operationalization of the variables appears in Table II. Since there are no previous theory-driven multidimensional measures of speed of internationalization, and our main objective is to develop this measure, we start by reiterating its content domain. First, we make an assumption related to the incremental view of the internationalization process of firms, i.e., that most firms evolve internationally following a path dependent process of incremental expansion. In particular, we postulate that all firms start in business at a specific time (time = 0) and from that moment their ‘internationalization clock’ starts counting the distance they cover along their international expansion process. For instance, in terms of the moment when they become international, some firms start earlier while others never internationalize, so their ‘speed’ of internationalization is zero. Similarly as in physics, ‘speed’ is defined and measured as ‘distance divided by time’. We can measure speed by assuming that the ‘distance’ covered is the cumulative magnitude reached by the firm in some of the key incremental indicators related to its internationalization process. For example, as firms internationalize, they usually start operations in many markets. Two firms starting business

simultaneously could have one firm entering 5 and the other 10 foreign markets after 5 years. We can infer that the second firm internationalizes faster.

We use this rationale to measure the two dimensions of the higher-order construct (Jarvis et al., 2003) speed of internationalization: ‘Speed of international learning’ and ‘speed of committing internationally’. This conceptualization and operationalization of the construct strongly contrasts with conventional approaches, which are not only generally limited in the temporal scope (focus only on the ‘time to internationalization’) and in the content of the measure (unidimensional), but also do not consider the measurement perspective. Consequently, as explained in the conceptualization, we applied the four decision rules proposed by Jarvis et al. (2003) to decide whether the central construct should be formative or reflective and determined that speed of internationalization should be ‘formative’.

As regards ‘speed of international learning’, this includes the speed of learning from repetition and from performing a diversity of international activities since the firm’s inception. Consistent with most literature recognizing that both time and diversity of operations are sources of learning, the construct is a function of both the time over which it has been accumulated and the scope or diversity of operations that have helped create it (e.g., Hutzschenreuter, Voll, & Verbeke, 2011; Brouthers, Brouthers, & Werner 2008; Papadopoulos & Martín Martín, 2010) since the start-up of the firm. The construct is operationalized as a reflective first-order, formative second-order construct (i.e., a ‘type II’ construct according to the alternative second-order factor specifications provided by Jarvis et al., 2003), that is, formed by two constructs with reflective indicators: ‘Speed of learning from repetition of international activities’ and ‘speed of learning from diversity of international activities’. The first one captures the speed of the time-based dimension of learning, i.e., learning by repetition and is reflected in indicators such as the speed of obtaining the first export order and achieving regular exports. The second one is reflected in

indicators such as the speed of the geographic scope and of diversity of entry modes used in international operations. That is, the 'rate' at which the firm has entered foreign countries and used a number of different entry modes. We applied the four decision rules mentioned earlier to decide whether the constructs should be formative or reflective and yielded this operationalization.

Regarding the measurement of speed of committing internationally, this is expected to be reflected in indicators capturing the speed and degree of integration and specialization of the resources and the amount of resources (Johanson & Vahlne, 1977). In other words, we measure the speed at which the firm commits specific resources with indicators such as the 'speed of committing staff in international activities' (e.g., number of full time employees currently active in international activities/ number of years operating) and the 'speed of using a firm's foreign language skills', and the speed at which the firm invests significant resources internationally or 'speed of entry modes commitment'.

Measurement of the Validation Construct and Controls. We measured international performance by using three typical indicators adapted from the scales developed by Cavusgil and Zou (1994), Styles (1998) and Zou, Taylor, and Osland (1998): perceived success (Cavusgil, 1984; Cavusgil & Zou, 1994; Lages, Lages, & Lages, 2005; Styles, 1998; Zou et al., 1998) of international activities (a measure of overall effectiveness), international sales volume (Hult et al., 2008; Zou et al., 1998) and perceived profitability (Styles, 1998; Zou et al., 1998) of international sales (two measures of financial performance). Therefore, the indicators of success of international activities and profitability of international sales are subjective while the measure of international sales is objective. Seminal reviews of the literature (Hult et al., 2008) have emphasized the value of using multiple indicators to measure performance.

In the validation test, we controlled for firm resources since some studies have shown their effect on international performance. We measured them as total assets, total sales and total workforce or number of employees (Miesenböck, 1988). We used managers' experience as another control, measured as the number of years the executive responsible for the international activity had been in the position in the firm and in his/her career. In addition, we controlled whether or not the firm internationalized early by including a dummy variable for those firms in the sample whose internationalization process started during their first two years of operations (e.g., Chetty & Campbell-Hunt, 2004). In parallel, we added a control for the number of years that the firm was operating in the domestic market before starting its internationalization. Early and late internationalization may have respectively a positive and negative effect on international performance. We entered a control for foreign equity measured as the percentage of foreign capital in the equity of the firm since companies with foreign capital may have better knowledge of foreign markets and international networks. This may eventually enhance their international performance. Finally, we controlled for the different industries covered by the sample.

Data Analysis Technique

We estimated the model by the Partial Least Squares (PLS) technique (Wold, 1982), a variance-based Structural Equation Modeling (SEM) method. This was considered as the most suitable data analysis technique for this research in view of the research objectives and exploratory nature of the study (the conceptualization of speed of internationalization, its two dimensions and their operationalization is novel and we expect new conceptualizations and measures in future studies) (Lew & Sinkovics, 2013), the sample size (Chin & Newsted, 1999; Hair, Sarstedt, Pieper, & Ringle, 2012), the non-normal distribution of most indicators and, especially, the presence of

second and higher-order formative constructs in the measurement model (Hair et al., 2012). PLS ensures against improper solutions, i.e., those outside the admissible parameter space, and factor indeterminacy (Fornell & Bookstein, 1982).

We followed one of the PLS-based methods for estimating models with higher-order constructs – the ‘two-stage’ approach (e.g., Henseler, Wilson, Götz, & Hautvast, 2007; Wetzels, Oederkerken-Schröder, & van Oppen, 2009) – and used latent variable scores in the estimation of the second and third-order constructs. Researchers interested in replicating our measure with their datasets can use this technique. The software used was PLS Graph (Chin, 2003).

RESULTS

Measuring Speed of Internationalization

We start with a presentation of the results for the measurement model and then continue with the structural model. As regards the former, first, all item loadings are well above the suggested acceptance limit of 0.70 except one of the items of the constructs ‘speed of committing internationally’, ‘international performance’ and the control variable ‘managers’ experience’ (see Table III). Since all three have a significant loading; their constructs reliability and average variance extracted (AVE) is over the recommended thresholds (as we explain below); in some specific situations loadings between 0.5 and 0.6 can be acceptable (Chin, 1998), and loadings lower than 0.7 are common practice among researchers (Hulland, 1999), we decided to retain them in the model. Second, construct reliability, measured as the composite reliability of the multiple indicator-constructs (Werts, Linn, & Jöreskog, 1974), exceeds the recommended thresholds (see column 5), suggesting that each set of indicators is properly measuring the construct for which it is intended. Third, the average variance extracted or AVE is above the acceptance criterion of 0.5 for all the reflective constructs (see column 6).

INSERT TABLE III ABOUT HERE

Fourth, the weights for the two dimensions forming speed of internationalization are significant (see Table IV) with values equal to 0.63 ($p < 0.01$) and 0.54 ($p < 0.05$) for speed of international learning and committing internationally, respectively. This means that the former makes a higher contribution to speed of internationalization than the latter. Similarly, the speed of learning from diversity of activities makes a more important and significant contribution to speed of international learning than learning from repetition of activities. As a standard precaution when working with formative measures (Mathieson, Peacock, & Chin, 2001), we tested for multicollinearity (see columns 4 and 5) and found the highest Variance Inflation Factor (VIF) to be 1.28, indicating that the measures are not affected by this potential problem.

INSERT TABLE IV ABOUT HERE

Finally, the comparison of bivariate correlations and square roots of the AVEs, presented in Table V, shows that discriminant validity is also strictly respected by the measurement model. Consequently, we can accept this measure as a valuable instrument built from reliable and valid constructs.

INSERT TABLE V ABOUT HERE

Validating Speed of Internationalization

The structural model implies that there is a relationship between the firms' speed of internationalization and their international performance. This relationship is tested by means of a 500 sub-sample bootstrap technique. The bootstrapping procedure generates a requested number of random samples from an original data set by sampling with replacement (Efron & Tibshirani, 1993). The results of the analyses show that the effect of speed of internationalization on international performance is highly significant (see Figure 1) with a path value (β) of 0.24 (t-value 4.14, $p < 0.001$). The effect size ($f^2 = 0.05$) or strength of the theoretical relationship can be considered *small* (Cohen, 1988), which is in line with effect sizes in international business (Ellis, 2010). These findings provide external validity for the measure of speed. Furthermore, the variance explained by the model (R^2) is 0.40 for the endogenous variable. Nevertheless, speed of internationalization explains a smaller part of the variation in the dependent variable (0.07) than the control variable 'firm resources' which has a $\beta = 0.56$ (t-value 10.57, $p < 0.001$) and accounts for the remaining variance². The other controls, 'managers' international experience', 'early internationalization', 'years operating in the domestic market', 'foreign equity' and 'industry' have no significant association with the dependent variable and for parsimony we did not include them in Figure 1.

INSERT FIGURE 1 ABOUT HERE

² The high impact of firm resources on international performance, however, is partially based on the presence of two highly correlated items in both constructs (sales and international sales). When the latter is excluded from the international performance construct, the results for the whole model are similar while the relationship between resources and international performance decreases (0.20 vs. 0.56) and the variance explained of the latter also diminishes (0.11 vs. 0.33).

Finally, the Stone-Geisser's cross-validated redundancy measure Q^2 (0.05) indicates that the dependent reflective construct has predictive relevance (Geisser, 1975). This statistic was estimated using a 'blindfolding' technique with the omission distance set at 8. The blindfolding technique assesses the validity of the paths by repetitively estimating the model parameters with random data points omitted (hold-out samples).

DISCUSSION

We begin by briefly highlighting our key findings and comparing them with the literature on speed of internationalization reviewed in Table 1, and subsequently elaborate on the discussion. Our findings indicate, first, that we can create a reliable and valid concept and measure of speed of internationalization departing from the main concepts of the original Uppsala model. This contrasts with the extant literature since most previous research did not connect their conceptualizations and operationalizations with internationalization theories and models. Second, in line with the latest prescriptions and discussions on speed of internationalization (Casillas & Acedo, 2013) the conceptualization and operationalization are multidimensional. Consistent with our theoretical perspective, two distinctive dimensions of speed of international learning and speed of committing internationally create speed of internationalization. Third, in contrast to most studies, we measure speed as a long-term perspective and hence analyze the whole internationalization process rather than only the start of the process. Fourth, the contribution of speed of international learning to the measure is more important than the contribution of speed of committing internationally and speed of learning from diversity of activities plays a more important role than speed of learning from repetition of activities. Fifth, we study the consequences of speed on performance, that is, speed is the independent variable in the model. This contradicts the majority of the studies reviewed in Table 1. It is also important to note that

contrary to the few articles studying performance, we focus on the international performance and not the general performance of the firm (Vermeulen, & Barkema, 2002; Wagner, 2004). We find that there is a positive relationship between speed of internationalization and international performance. The relationship is stronger than when we use the most typical measure of speed ('time to internationalization'). These findings add to the scarce empirical evidence on the topic which is based on large MNCs (Chang & Rhee, 2011; Chen & Yeh, 2012; Vermeulen & Barkema, 2002; Wagner, 2004) and INV (Khavul et al., 2010). Finally, consistent with what can be expected, early internationalizing firms appear to have a higher speed of internationalization.

Consequently, we discuss in more detail by making use of a broader spectrum of literature, the most relevant findings, starting by the importance of the two dimensions creating speed. First, the findings (a) show that both dimensions create speed of internationalization and (b) provide slightly more importance for speed of international learning than to speed of committing internationally (contribution of 0.63 $p < 0.01$ vs. 0.54 $p < 0.05$). This is consistent with Johanson and Vahlne's (1977) view that learning is important for the firm and as it assimilates knowledge it will make more commitments to the market. Since learning reduces uncertainty it creates speed of internationalization as firms proceed to expand internationally. This reflects Acedo and Jones' (2007) finding that firms with lower perceptions of risk internationalized more quickly. The findings are consistent with several studies (e.g., Knight, Madsen, & Servais, 2004), which found that learning plays an important role in the 'speed' of the firm's internationalization. An explanation why speed of commitment is of lower importance than speed of learning could be the lag effect, as a firm has to learn first before it commits more resources to the market.

In addition, we found that speed of learning from diversity of activities makes a more important and significant contribution to speed of international learning than learning from repetition of activities (0.70 $p < 0.001$ vs. 0.54 $p < 0.05$). Learning from repetition is probably

less important because the firm is not learning many new things through regular exporting with established routines and procedures. These results are compatible with Petersen and Welch's (2002) findings that the combination of modes a firm uses in its international markets provide it with a rich amount of knowledge. It also supports the Uppsala model and Zahra et al.'s (2000) perspective that the more diverse the market a firm operates in, the more knowledge it acquires. Similarly, Kuivalainen, Sundqvist and Servais (2007) found that firms involved in a number of diverse countries benefit from learning, which helped them to perform better than those who were in a few countries. This infers that learning from diversity of activities may increase the firm's absorptive capacity to acquire the new knowledge available to the firm as it expands.

Second, we elaborate on the finding of a significant positive relationship between speed of internationalization and international performance. While Vermeulen and Barkema's (2002) results show that speed negatively moderates a firm's profitability we wish to clarify that they studied speed of internationalization in multinational firms and used different measures for this construct and performance compared to those used in our study. Given the constructs and indicators we use in our measure, market knowledge and market commitment are important in creating speed of internationalization and, in turn, international performance.

We delve into the born global literature relating to 'time to internationalize' and international performance to help position our findings. Studies in the born global literature (Knight & Cavusgil, 2005; Kuivalainen et al., 2007) provide mixed results on whether firms that internationalize soon after inception are better performers. We had entered a control for whether or not the firm internationalized early and the results show that the fact that firms internationalize earlier does not appear to contribute to a higher international performance. This provides different results to Knight and Cavusgil's (2005) finding that born globals who internationalize soon after inception tend to perform better than others. If we connected this control to speed of

internationalization, however, early internationalizing firms would have a highly significant and positive relationship with speed of internationalization (Beta = 0.63, $p < 0.001$) explaining up to 40% of the variance of this construct. This relationship could be seen as an additional external validation of the speed of internationalization construct.

Finally, we made a dual comparison of the explanatory power of our measure in relation to the most common measure of ‘speed of internationalization’. We considered the *time to internationalization* and operationalized it as the number of years before the first export order and the number of years before the firm became a regular exporter. Controlling for firm size, we found that time to internationalization was not significantly related to international performance for the firms in the sample (see Table VI) either if measured as number of years before the first export order ($\beta = -0.10$, n. s.) or as the number of years before becoming a regular exporter ($\beta = -0.12$, n. s.). The negative sign makes sense since it reflects that earlier internationalizing firms outperform ‘late internationalizers’. In addition, we found that the variance explained of international performance, and the predictive relevance, were smaller for any of the two measures and models (0.006 and 0.013% and 0.02 and 0.03 respectively) than the variance explained by our construct and model (see columns 3 and 4 in Table VI). We can conclude that our measure is a better predictor of international performance than the most common measure used to capture speed of internationalization.

INSERT TABLE VI ABOUT HERE

CONCLUSIONS, RESEARCH IMPLICATIONS AND FUTURE RESEARCH DIRECTIONS

The alternative conceptualization and measurement of speed makes a useful contribution to the international business literature by anchoring it in influential internationalization process theory and models. It enhances the content validity of multidimensional vs. only time-based conceptualizations and measures, and adds to the discussion of other constructs addressed to capture the dynamics of firms' internationalization process. The new conceptualization and operationalization has a number of important research implications:

Theoretical vs. Empirical-Based Definition and Measurement. This study conceptualizes speed of internationalization based on internationalization process theory, while most other studies on speed have a more empirical background (which probably explains why they do not anchor their measurement in theory). The theoretical dimension of speed can mainly be found in the nominator, which in this study reflects knowledge and commitment, but future research could build on the latest conceptualization of the state aspects of internationalization (Johanson & Vahlne, 2009). Thus, concepts like 'recognition of opportunities' and the 'network position' could be components of the measures of the internationalization distance and speed which may be of particular interest. For instance, as the latest conceptualization of the Uppsala model emphasizes the importance of relationships, ties and alliances, a network measurement should have a nominator, which makes it possible to measure how fast a firm gains a central position in a foreign network and the speed it takes to develop social and business relationships in international markets.

As the 'Uppsala model' is only one of several internationalization theories, alternative conceptualizations and measurements could capture the main concepts and other dimensions of

distance in other theories. In the studies reviewed there is no attempt to develop a speed concept based on the theoretical fundamentals in internalization or OLI theory.

A Multidimensional View of Speed. A second research implication is to have a multidimensional view of speed of internationalization. We argue that the definition of speed of internationalization must build on the true and relevant meaning of speed and internationalization. To capture the nature of internationalization, we used the dominant internationalization process theory (Johanson & Vahlne, 1977) and considered the distance covered by the firm as its current state of internationalization (the 'nominator' of speed). Since the speed of the components (speed of learning and speed of committing internationally) may vary during the internationalization process, it is likely that speed of internationalization is driven by different activities depending on where in the process the firm is. Researchers need to move in this direction and consider speed of internationalization as a multidimensional construct, which extends beyond time.

Time to Internationalization vs. Speed of Internationalization. The third implication for researchers is to distinguish between time to internationalization and speed of internationalization, which is crucial if internationalization is considered as a process over time. This distinction unlocks new areas for internationalization research. For instance, it helps us to identify four typical internationalization strategies. Firms can begin to internationalize soon after inception at either (a) high or (b) low speed. Similarly, firms could take a long time to start internationalizing but once they start it could be at either (c) high or (d) low speed. Two of these strategies ('a' and 'd') have been studied extensively. One of them relates to research on born globals, where firms start to internationalize soon after inception, and often at high speed (a). The second strategy relates to traditional firms that are supposed to start late and to internationalize at low speed (d), though neither incremental nor gradual necessarily means low speed.

As stated, the distinction between time to internationalization and speed of internationalization implies that there are theoretically two more internationalization strategies ('b' and 'c'). First, firms can start to internationalize soon after inception, but then maintain a low speed (b). Second, firms can begin to internationalize a long time after inception but then maintain a high speed (c). Some questions that need to be addressed are: Do these processes actually exist? If so, what are the characteristics of firms that follow them? Before researchers can address these questions, however, we need to have an appropriate conceptualization and measure of speed.

Mean Speed vs. Acceleration. While we operationalize speed as a mean, firms do not internationalize at a 'constant speed' because speed is most likely to change over time. A reliable and valid measure of speed, anchored in sound theory, is a prerequisite to study *its change*. This study may contribute to the future development of a measure of change of speed, that is, acceleration (and deceleration). Acceleration (e.g., Pla-Barber & Escribá-Esteve, 2006; Shrader, Oviatt, & McDougall, 2000; Weerawardena et al., 2007) is the rate of change of speed. What causes acceleration of speed during internationalization and the outcomes of such acceleration can be interesting research avenues. This could contribute to understanding both initial internationalization and how firms that are already present in several foreign markets expand.

If we accept that internationalization does not follow a constant speed, it ensues that some periods may have decreased speed, which is deceleration. This does not necessarily mean that the firm exits a foreign market, but that the internationalization distance reached during a specific period of time is shorter than in the previous period. What characterizes these periods is still under-researched, partly because of the lack of an appropriate conceptualization and measurement. By measuring speed at two points of time we can analyze if the speed is changing,

thus identifying periods of accelerated or decelerated speed. This is not possible with most measures used to date.

In addition, future studies could also deepen our understanding of speed (and acceleration) by comparing different types of firms: SMEs vs. MNEs; business to consumer vs. business to business markets; products vs. services; traditional vs. technological and/or new industries; emerging vs. developed-country firms and private vs. state-owned firms. Furthermore, the potential linkages between (i) market selection, entry modes and speed of internationalization; (ii) psychic, institutional, cultural, geographical and other dimensions of distance and speed, and (iii) government-sponsored internationalization programs and speed offer promising areas where researchers can contribute. Finally, given that only one study (Casillas & Moreno-Menéndez, 2013) uses a unit of time (number of days) different to ‘years’, other time periods rather than ‘years’ could be fruitfully applied.

MANAGERIAL RELEVANCE AND POLICY IMPLICATIONS

The alternative conceptualization and measure of speed of internationalization has several implications for managers and policy makers. First, since the high speed of internationalization in terms of international learning and commitment indicates an enhanced international performance, managers need to absorb and use new knowledge as their firms expand internationally. When advising SMEs, policy-makers need to have assistance programs that focus on accelerating international learning which subsequently makes it easier for international commitment and performance. For example, policy-makers could facilitate seminars where managers share their international experiences and learn from each other rather than waiting to accumulate this knowledge through their own experience. Another example would be to encourage the creation of (social) networks of international managers and to provide them with incentives to do so as a way

to foster exchange of their professional experiences in foreign markets. Managers could collaborate with each other concerning resource commitment in their international markets such as, piggybacking on another firm's distributors, sales subsidiaries or customers. Managers who intend to accelerate their learning about internationalization need to be exposed to a diverse number of markets (wide geographic scope) and diverse entry modes (e.g., combine exports, agents and sales subsidiaries). By engaging in such diverse activities, managers can learn quicker than from repetitive international activities by using a single entry mode (e.g., exporting) in a few markets with a narrow geographic scope.

Second, managers of early internationalizing firms can expect a higher speed of internationalization than managers of traditional firms (c.f., the relationship between the control 'early international' and speed of internationalization). However, being an early internationalizing firm will not directly result in performance gains per se (c.f., the relationship between the control 'early international' and international performance), but through subsequent faster international learning and commitment. Speed appears to behave as the mediator driver of international performance for early internationalizing firms.

Third, policy makers and managers need to consider the firm's continuous internationalization process and implications of a high speed of internationalization as well as changes in speed of internationalization and the destabilizing effects of rapid growth on resource constrained firms (Chetty & Campbell-Hunt, 2003a; Wagner, 2004). Sometimes firms might have to decelerate but can accelerate later when they acquire resources such as knowledge and capital to pursue new opportunities. Understanding and managing the speed of internationalization is extremely important considering that the economic model of several developed (e.g., Australia, Finland, Germany, New Zealand, Spain, Sweden, etc.) and emerging markets (e.g., China, India, Indonesia, Malaysia, the Philippines, Singapore, Taiwan, Thailand,

Vietnam, etc.) is export led and policy makers and managers aim to grow their economies and succeed through internationalization. They realize that they need to understand firms' international growth, especially speed of internationalization, because it can explain the success or failure of firms. Consequently, they strive to provide the appropriate infrastructure support for firms and to make decisions to enhance firms' international performance. This is particularly clear in the case of our empirical context, Spain, where SMEs are resource constrained, export oriented and embedded in a large and demanding single European market. While we notice that policy makers, institutions and managers focus on internationalization as one of the main contributors to future growth, our study does not allow us to compare *past* and current speed of internationalization of the firms in our sample.

LIMITATIONS

We acknowledge five main limitations in this study. First, the cross sectional nature of the data impedes drawing conclusions about causality when testing the relationship between speed of internationalization and international performance. Future studies could replicate the model using longitudinal research designs. Second, although randomly drawn and representative of the SMEs of the region, the sample comes from a specific geographical area and one country. A one-country sample, however, is a common limitation in empirical research, since they appear in 61% of international business articles (Yang et al., 2006). Evidence from different countries will help establish the cross-country validity of the measure and findings. Third, we assume that either all firms want to internationalize, consider internationalization a positive process, or are able to internationalize from inception. Some firms may, however, deliberately choose not to internationalize early which may result in a low speed of internationalization regardless of the pace they achieve once they start. Fourth, a survival bias might have some effect on the findings

since, as with most research on existing firms, failure was under represented (Denrell, 2003). An interesting avenue for future research is to control the survival selection bias by collecting data about the failure and survival of sampled firms. Finally, although it was not our central construct, the conceptualization and measurement of international performance is important. We acknowledge that an alternative conceptualization and operationalization may better capture, for instance, strategic outcomes of the firm in foreign markets.

Our main purpose was to develop an alternative, theory-based conceptualization and measure of speed of internationalization. In this endeavor, we found a positive correlation between speed of internationalization and international performance. The many contextual factors in which the speed-performance linkage may be contingent, and the shape of the speed function itself, are promising areas for further inquiry. It could be that a number of moderators would offer insights about the relationship and some other shape (quadratic or cubic model) may provide a better explanation for the relationship. Ultimately, the main challenge for researchers is to integrate the concept of speed into mainstream internationalization theories and models and to clarify its role.

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REFERENCES

- Acedo, F. J., & Jones, M. V. (2007). Speed of internationalization and entrepreneurial cognition: Insights and a comparison between international new ventures, exporters and domestic firms. *Journal of World Business*, 42(3), 236–252.
- Armstrong, S. J., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14(August), 396–402.
- Barkema, H. G., Bell, J. H. J., & Pennings, J. M. (1996). Foreign entry, cultural barriers and learning. *Strategic Management Journal*, 17(2), 151–166.
- Barkema, H. G., & Vermeulen, G. A. M. (1998). International expansion through start-up or through acquisition: An organizational learning perspective. *Academy of Management Journal*, 41(1), 7–26.
- Brouthers, K. D., Brouthers, L. E., & Werner, S. (2008). Resource-based advantages in an international context. *Journal of Management*, 34(2), 189–217.
- Casillas, J. C., & Acedo, F. J. (2013). Speed in the Internationalization Process of the Firm. *International Journal of Management Reviews*, 15(1), 15–29.
- Casillas, J. C., & Moreno-Menéndez, A. M. (2013). Speed of the internationalization process: The role of diversity and depth in experiential learning. *Journal of International Business Studies*, doi:10.1057/jibs.2013.29.
- Cavusgil, S. T. (1984). Organizational characteristics associated with export activity. *Journal of Management Studies*, 21(1), 3–22.
- Cavusgil, S. T., & Zou, S. (1994). Marketing strategy-performance relationship: An investigation of the empirical link in export market ventures. *Journal of Marketing*, 58(1), 1–21.
- Chang, S.-J., & Rhee, J. H. (2011). Rapid FDI expansion and firm performance. *Journal of International Business Studies*, 42(8), 979–994

- Chang, S. J., van Witteloostuijn, A., & Eden, L. (2010). From the Editors: Common method variance in international business research. *Journal of International Business Studies*, 41(2), 178–184.
- Chen, C. I., & Yeh, C. H. (2012). Re-examining location antecedents and pace of foreign direct investment: Evidence from Taiwanese investments in China. *Journal of Business Research*, 65(8), 1171–1178.
- Chetty, S., & Campbell-Hunt, C. (2003a). Explosive international growth and problems of success amongst small to medium-sized Firms. *International Small Business Journal*, 21(1), 61–81.
- Chetty, S., & Campbell-Hunt, C. (2003b). Paths to internationalisation among small- to medium-sized firms: A global versus regional approach. *European Journal of Marketing*, 37(5/6), 796–820.
- Chetty, S., & Campbell-Hunt, C. (2004). A strategic approach to internationalization: A traditional versus a "born-global" approach. *Journal of International Marketing*, 12(1), 57–81.
- Chin, W. W. (2003). PLS Graph 3.0. Soft Modeling Inc., Houston.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G.A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295–336). Mahwah, NJ: Lawrence Erlbaum Associates.
- Chin, W. W., & Newsted, P. R. (1999). Structural equation modelling analysis with small samples using partial least squares. In R. H. Hoyle (Ed.), *Statistical strategies for small sample research* (pp. 307–341). Thousand Oaks, CA: Sage.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed. Hillsdale, NJ: Lawrence Erlbaum.

- Coeurderoy, R., & Murray, G. (2008). Regulatory environments and the location decision: Evidence from the early foreign market entries of new-technology-based firms. *Journal of International Business Studies*, 39(4), 670–687.
- Da Rocha, A., Cotta del Mello, R., Pacheco, H., & de Abreu Farias, I. (2012). *International Marketing Review*, 29(3), 228–252.
- Denrell, J. (2003). Vicarious learning, undersampling of failure, and the myths of management. *Organization Science*, 14(3), 227–243.
- Diamantopoulos, A., & Winklhofer, H. (2001). Index Construction with Formative Indicators: An Alternative to Scale Development. *Journal of Marketing Research*, 38(May), 269–277.
- Efron, B., & Tibshirani, R. J. (1993). *An Introduction to the Bootstrap*. New York: Chapman and Hall.
- Ellis, P. D. (2010). Effect Sizes and the Interpretation of Research Results in International Business. *Journal of International Business Studies*, 41(9), 1581–1588.
- Eriksson, K., Johanson, J., Majkgård, A., & Sharma, D. (1997). Experiential knowledge and cost in the internationalization process. *Journal of International Business Studies*, 28(2), 337–360.
- Fornell, C., & Bookstein, F. (1982). Two Structural Equation Models: LISREL and PLS Applied to Consumer Exit-Voice Theory. *Journal of Marketing Research*, 19(November), 440–452.
- Freeman, S., & Cavusgil, T. S. (2007). Towards a typology of commitment states among managers of born-global firms: A study of accelerated internationalization. *Journal of International Marketing*, 15(4), 1–40.
- Freeman, S., Edwards, R., & Schroder, B. (2006). How smaller born-global firms use networks and alliances to overcome constraints to rapid internationalization. *Journal of International Marketing*, 14(3), 33–63.

- Geisser, S. (1975). The predictive sample reuse method with applications. *Journal of the American Statistical Association*, 70, 320–328.
- Hair, J. F., Sarstedt, M., Pieper, T. M., & Ringle, C. M. (2012). The Use of Partial Least Squares Structural Equation Modeling in Strategic Management Research: A Review of Past Practices and Recommendations for Future Applications. *Long Range Planning*, 45(5), 320–340.
- Henseler, J., Wilson, B., Götz, O., & Hautvast C. (2007). Investigating the moderating role of fit on sports sponsoring and brand equity: A structural model. *International Journal of Sports Marketing and Sponsorship*, 8(4), 321–329.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic Management Journal*, 20(2), 195–204.
- Hult, G. T. M., Ketchen, D. J., Jr., Griffith, D. A., Chabowski, B. R., Hamman, M. K., Dykes, B. J., Pollitte, W. A., & Cavusgil, S. T. (2008). An assessment of the measurement of performance in international business research. *Journal of International Business Studies*, 39(6), 1064–1080.
- Hutzschenreuter, T., Voll, J. C., & Verbeke, A. (2011). The impact of added cultural distance and cultural diversity on international expansion patterns: A Penrosean perspective. *Journal of Management Studies*, 48(2), 305–329.
- Jarvis, C. B., Mackenzie, S. B., & Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of Consumer Research*, 30(2), 199–219.
- Javalgi, R. G., & Todd, P. R. (2011). Entrepreneurial orientation, management commitment, and human capital: The internationalization of SMEs in India. *Journal of Business Research*, 64(9), 1004–1010.

- Johanson, J., & Vahlne, J.-E. (1977). The internationalization process of the firm. *Journal of International Business Studies*, 8(Spring/Summer), 23–32.
- Johanson, J., & Vahlne, J.-E. (1990). The mechanism of internationalisation. *International Marketing Review*, 7(4), 11–24.
- Johanson, J., & Vahlne, J.-E. (2003). Business relationship learning and commitment in the internationalization process. *Journal of International Entrepreneurship*, 1(1), 83–101.
- Johanson, J., & Vahlne, J.-E. (2006). Commitment and opportunity development in the internationalization process: A note on the Uppsala internationalization process model. *Management International Review*, 46(2), 1–14.
- Johanson, J., & Vahlne, J.-E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 49(9), 1411–1431.
- Johanson, J., & Wiedersheim-Paul, F. (1975). The internationalization of the firm-four Swedish cases. *Journal of Management Studies*, 12(3), 305–323.
- Jones, M. V., & Coviello, N. E. (2005). Internationalisation: Conceptualising an entrepreneurial process of behaviour in time. *Journal of International Business Studies*, 36(3), 284–303.
- Khavul, S., Pérez-Nordtvedt, L., & Wood, E. (2010). Organizational entrainment and the internationalization of new ventures from emerging markets. *Journal of Business Venturing*, 25(1), 104–119.
- Kiss, A., & Danis, W. M. (2008). Country institutional context, social networks and new venture internationalization speed. *European Management Journal*, 26(6), 388–399.
- Knight, G. A., & Cavusgil, S. T. (2005). A taxonomy of born-global firms. *Management International Review*, 45(3), 15–35.

- Knight, G. A., Madsen, T. K., & Servais, P. (2004). An enquiry into born global firms in Europe and the US. *International Marketing Review*, 21(6), 645–665.
- Kogut, B., & Zander, U. (1993). Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies*, 24(4), 625–645.
- Kuivalainen, O., Sundqvist, S., & Servais, P. (2007). Firms' degree of born-globalness, international entrepreneurial orientation and export performance. *Journal of World Business*, 42(3), 253–267.
- Lages, L. F., Lages, C., & Lages, C. R. (2005). Bringing export performance metrics into annual reports: The APEV scale and the PERFEX scorecard. *Journal of International Marketing*, 13(3), 79–104.
- Lee, J.-W., Abosag, I., & Kwak, J. (2012). The role of networking and commitment in foreign market entry process: Multinational corporations in the Chinese automobile industry. *International Business Review*, 21(1), 27–39.
- Lew, Y. K., & Sinkovics, R. R. (2013). Crossing Borders and Industry Sectors: Behavioral Governance in Strategic Alliances and Product Innovation for Competitive Advantage. *Long Range Planning*, 46(1–2), 13–38.
- Lin, W.-T. (2012). Family ownership and internationalization processes: Internationalization pace, internationalization scope, and internationalization rhythm. *European Management Journal*, 30(1), 47–56.
- Luo, Y., & Peng, M. W. (1999). Learning to compete in a transition economy: Experience, environment and performance. *Journal of International Business Studies*, 30(2), 269–296.
- Luo, Y., Zhao, J. H., & Du, J. (2005). The internationalization speed of e-commerce companies: An empirical analysis. *International Marketing Review*, 22(6), 693–709.

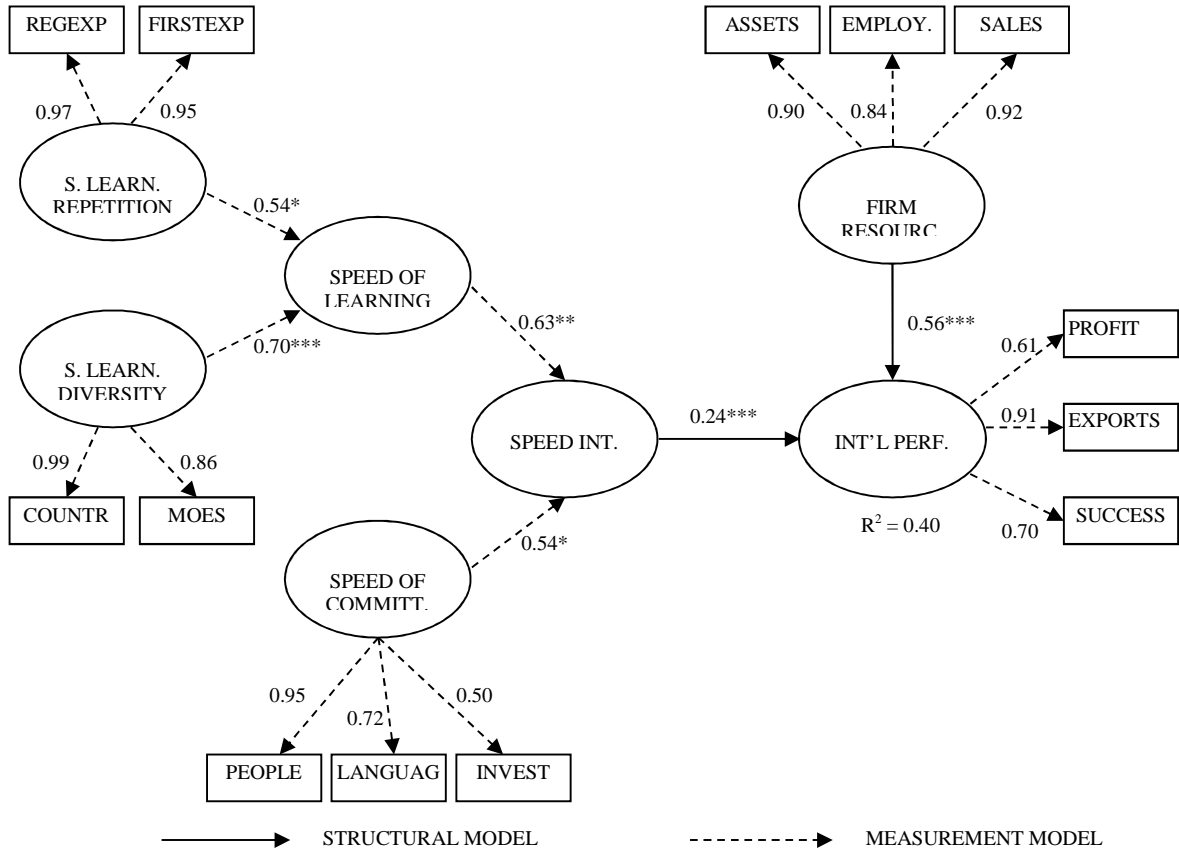
- Mathieson, K., Peacock, E., & Chin, W.W. (2001). Extending the technology acceptance model: The influence of perceived user resources. *The Data Base for Advances in Information Systems*, 32(Summer), 86–112.
- McDougall, P. P., Oviatt, B. M., & Shrader, R. C. (2003). A comparison of international and domestic new ventures. *Journal of International Entrepreneurship*, 1(1), 59–82.
- McDougall, P. P., Shane, S., & Oviatt, B. M. (1994). Explaining the formation of international new ventures: the limits of theories from international business research. *Journal of Business Venturing*, 9(6), 469–487.
- McNaughton, R. (2003). The number of export markets that a firm serves: Process models versus the born-global phenomenon. *Journal of International Entrepreneurship*, 1(3), 297–311.
- Miesenböck, K. J. (1988). Small business and exporting: A literature review. *International Small Business Journal*, 6(2), 42–61.
- Morgan-Thomas, A., & Jones, M. V. (2009). Post-entry dynamics: Differences between SMEs in the development speed of their international sales. *International Small Business Journal*, 27(1), 71–97.
- Musteen, M., Francis, J., & Datta, D. K. (2010). The influence of international networks on internationalization speed and performance: A study of Czech SMEs. *Journal of World Business*, 45(3), 197–205.
- Nadkarni, S., & Perez, P. D. (2007). Prior conditions and early international commitment: The mediating role of domestic mindset. *Journal of International Business Studies*, 38(1), 160–176.
- Oviatt, B. M., & McDougall, P. P. (1994). Toward a theory of international new ventures. *Journal of International Business Studies*, 25(1), 45–64.

- Oviatt, B. M., & McDougall, P. P. (2005). Defining international entrepreneurship and modeling the speed of internationalization. *Entrepreneurship Theory and Practice*, 29(5), 537–554.
- Oxford English Dictionary (1989), 2ed. Oxford: Clarendon Press.
- Papadopoulos, N., & Martín Martín, O. (2010). Toward a model of the relationship between internationalization and export performance. *International Business Review*, 19(4), 388–406.
- Petersen, B., & Welch, L. (2002). Foreign operation mode combinations and internationalization. *Journal of Business Research*, 55(2), 157–162.
- Pla-Barber, J., & Escribá-Esteve, A. (2006). Accelerated internationalisation: evidence from a late investor country. *International Marketing Review*, 23(3), 255–278.
- Prashantham, S., & Young, S. (2011). Post-entry speed of international new ventures. *Entrepreneurship Theory and Practice*, 35(2), 275–292.
- Ramos, E., Acedo, F. J., & Gonzalez, M. R. (2011). Internationalisation speed and technological patterns: A panel data study on Spanish SMEs. *Technovation*, 31(10-11), 560–572.
- Raymond, L., & St-Pierre, J. (2011). Strategic capability configurations for the internationalization of SMEs: A study in equifinality. *International Small Business Journal*, 31(1): 82–102.
- Rialp, A., Rialp, J., & Knight, G. A. (2005). The phenomenon of early internationalizing firms: what do we know after a decade (1993-2003) of scientific inquiry? *International Business Review*, 14(2), 147–166.
- Sharma, N., Young, L., & Wilkinson, I. (2006). The commitment mix: Dimensions of commitment in international trading relationships in India. *Journal of International Marketing*, 14(3), 64–91.

- Shrader, R. C., Oviatt, B. M., & McDougall, P. P. (2000). How new ventures exploit trade-offs among international risk factors: lessons for the accelerated internationalization of the 21st century. *Academy of Management Journal*, 43(6), 1227–1247.
- Styles, C. (1998). Export performance measures in Australia and the United Kingdom. *Journal of International Marketing*, 6(3), 12–36.
- Tan, A., Brewer, P., & Liesch, P. W. (2007). Before the first export decision: Internationalisation readiness in the pre-export phase. *International Business Review*, 16(3), 294–309.
- Vermeulen, F., & Barkema, H. (2002). Pace, rhythm, and scope: Process dependence in building a profitable multinational corporation. *Strategic Management Journal*, 23(7), 637–653.
- Wagner, H. (2004). Internationalization speed and cost efficiency: evidence from Germany. *International Business Review*, 13(4), 447–463.
- Weerawardena, J., Mort, G. S., Liesch, P. W., & Knight, G. (2007). Conceptualizing accelerated internationalization in the born global firm: A dynamic capabilities perspective. *Journal of World Business*, 42(3), 294–306.
- Werts, C. E., Linn R. L., & Jöreskog, K. G. (1974). Intraclass reliability estimates: Testing structural assumptions. *Educational and Psychological Measurement*, 34(1), 25–33.
- Wetzels, M., Oderkerken-Schröder, G., & van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS Quarterly*, 33(1), 177–195.
- Wold, H. (1982). Soft modeling: The basic design and some extensions. In K. G. Jöreskog, & H. Wold (Eds.), *Systems Under Indirect Observation*, Part 2 (pp. 1–54). Amsterdam: North Holland Press.
- Yang, Z., Wang, X., & Su, C. (2006). A review of research methodologies in international business. *International Business Review*, 15(6), 601–617.

- Zahra, S. A., Ireland, D. R., & Hitt, M. A. (2000). International expansion by new venture firms: international diversity, mode of market entry, technological learning and performance. *Academy of Management Journal*, 43(5), 925–950.
- Zhou, L. (2007). The effects of entrepreneurial proclivity and foreign market knowledge on early internationalization. *Journal of World Business*, 42(3), 281–293.
- Zou, S., Taylor, C. R., & Osland, G. E. (1998). The EXPERF scale: A cross-national generalised export performance measure. *Journal of International Marketing*, 6(3), 37–58.
- Zucchella, A., Palamara, G., & Denicolai, S. (2007). The drivers of the early internationalization of the firm. *Journal of World Business*, 42(3), 268–280.

FIGURE 1
 PATH VALUES (B), VARIANCE EXPLAINED (R^2) AND MEASUREMENT MODEL



* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (based on a Student $t_{(499)}$ distribution with one tail).

TABLE I
RECENT STUDIES FOCUSING ON SPEED OF INTERNATIONALIZATION AND RELATED CONSTRUCTS

Authors	Term of the concept	Definition	Conceptualization	Purpose	The role of speed	Measurement	Sample	Findings or outcome about speed
Casillas and Moreno-Menéndez (2013)	Internationalization speed-and speed of entry are used as synonyms	Speed is the relation between the internationalization process and time	Speed stretches over long period of time and covers the internationalization process post-entry	To analyze how diversity and depth of past international activities, as sources of experiential learning, affect the speed of the internationalization process	Speed is a dependent variable	Speed of an international operation is measured as the number of days between the operation and the immediate prior operation of the firm	8434 international operations (establishment of a stable presence in a foreign market) by 889 Spanish firms over the period 1986-2008	A higher diversity of experience in international markets and in the modes of operations have a curvilinear influence on speed (U form). A higher depth of market experience in the host country has curvilinear influence on speed (inverted U form) while a higher depth of mode of operation experience in the host country has positive linear influence on speed
Casillas and Acedo (2013)	Speed in the internationalization process	Speed is the relationship between time and a company's international events	Speed is a multidimensional and formative construct integrating the firm's international behavior and time	To examine the role of speed in the internationalizing process, and to propose future lines of research to increase understanding of speed	Speed is a distinct construct and a dependent and an independent variable	A quotient between a specific variation and a specific unit of time	Conceptual	It incorporates speed as an explicit dimension in the study of internationalizing processes. Speed is a multidimensional and formative construct that can be analyzed using different time scales and continuous and discontinuous change dimensions
Chen and Yeh (2012)	Investment pace	No explicit definition	No discussion of the nature or content of the concept	To examine how the learning effect influences MNEs' dynamic preferences with regard to FDI-location antecedents and the time span between successive FDI cases	Pace is an independent variable	FDI pace is measured as the time span between two successive investments	Taiwanese listed firms investments in China from 1997 to 2007	The more FDI experience firms accumulate, the faster their investment pace. The time span between firms' FDI is shorter in the later stages rather than the early stages of FDI
Lee, Abosag and Kwak (2012)	Speed of foreign market entry	No explicit definition	No discussion of the nature or content of the concept	To answer why there are variations in the speed of MNCs' market entry into emerging markets and whether it is influenced by networking activities/capabilities of MNCs	Speed is a dependent variable	No measurement is given and no systematic empirical evidence is reported on speed	Three automobile manufacturers' entry into China	The study demonstrates that networking affects commitment and learning, which determine market entry speed, though it is unclear how and why

TABLE I
RECENT STUDIES FOCUSING ON SPEED OF INTERNATIONALIZATION AND RELATED CONSTRUCTS (CONTINUATION)

Authors	Term of the concept	Definition	Conceptualization	Purpose	The role of speed	Measurement	Sample	Findings or outcome about speed
Lin (2012)	Internationalization pace	No explicit definition but pace refers to the speed of internationalization	Builds on Vermeulen and Barkema (2002) and makes a difference between pace and rhythm, but does not discuss the nature of the concept	To understand the effects of family ownership on internationalization processes	Speed is a dependent variable	Pace is measured as the average number of foreign subsidiaries per year	656 Taiwanese firms having established at least one subsidiary between 2000-2008	Supports the hypothesis that family ownership is positively associated with a firm's internationalization speed
Chang and Rhee (2011)	Speed of FDI expansion	Speed is defined as the average number of FDIs in new countries per year since a firm's first FDI	No discussion of the nature or content of the concept	To verify the circumstances under which rapid FDI expansion improves performance	Speed is an independent variable	Speed is measured as the average number of foreign manufacturing subsidiaries divided by the number of years since the firm's first foreign expansion	851 FDIs in new countries in the manufacturing sector made by 276 publicly listed Korean manufacturing firms between 1970-2003	Support the two hypotheses; (1) speed positively affects performance for firms with strong brand equity, marketing know-how and financial slack, and (2) speed positively affects performance for firms facing intensive global competition
Prashantham and Young (2011)	Post-entry speed	Post-entry speed is defined as pace of international expansion of a new venture once it becomes an international new venture	Builds on Oviatt and McDougall (1994), but limited discussion of the nature and content of post-entry speed	To develop a model of post-entry internationalization speed, in which pace varies according to the firm's relative capabilities in accumulating and using knowledge through explorative learning	Speed is a dependent variable	No explicit measurement but proposes that post entry speed has two components: Country scope and international commitment	Conceptual	It advances six hypotheses, where the accumulation of market knowledge is associated with country scope, speed and accumulation of technological knowledge with international commitment speed
Ramos, Acedo and Gonzalez (2011)	Speed of entry	No definition of the concept	No discussion of the nature or content of the concept, nor does it link it to theory	To evaluate the effect of a firm's technological pattern on its speed of entry into international markets via export	Speed is a dependent variable	Speed is calculated from the inception of the firm and date to its first international export	945 Spanish manufacturing SMEs with ten or more employees between 1990-2006	Four factors -prior year's sales, external R&D expenditure, proportion of qualified personnel and innovating capabilities through process innovation- had a positive effect on speed

TABLE I
RECENT STUDIES FOCUSING ON SPEED OF INTERNATIONALIZATION AND RELATED CONSTRUCTS (CONTINUATION)

Authors	Term of the concept	Definition	Conceptualization	Purpose	The role of speed	Measurement	Sample	Findings or outcome about speed
Khavul, Pérez-Nordtvedt and Wood (2010)	Speed of internationalization	No definition of the concept	No discussion of the nature or content of the concept, nor does it link it to theory	To develop six hypotheses on factors (degree, scope and speed of internationalization) positively related to performance. These relationships are positively moderated by entrainment with important customers	Speed is an independent variable	Speed is based on when the firm has its first international sale. The age of internationalization was recoded to capture the inverse relationship between speed and age	166 firms under ten years of age from China (71), India (48) and South Africa (47)	The positive relationship of speed on performance is not supported, neither is this relationship strengthened by entrainment with important customers. Scope and degree have a positive relationship with performance and are strengthened by entrainment
Musteen, Francis and Datta (2010)	Internationalization speed	No definition of the concept	No discussion of the nature or content of the concept, nor does it link it to theory	To analyze if the three types of network embeddedness of SME CEOs influence the performance and speed of SME internationalization	Speed is a dependent variable	Speed is measured as the amount of elapsed time (in years) between the year of firm founding and its first international venture	155 Czech SME firms founded after the fall of the Communism in 1989	It confirms the hypothesis that cognitive embeddedness (the CEO and the international ties speak a common language) causes speed is confirmed, but it does not support the hypotheses that relational and structural embeddedness cause speed
Morgan-Thomas and Jones (2009)	International sales development speed	No explicit definition	Part of the born global theory but does not conceptualize or integrate the speed concept	To test the research hypothesis concerning knowledge intensity, to extend the generalizability of the research beyond the much-researched high-tech sectors and to provide a robust set of results based on a large sample of firms	Speed of international sales development is a dependent variable	International sales development speed is measured by juxtaposing the time span with the firm's international intensity (ratio of total international sales to total turnover)	200 British SMEs that have commenced export activity within 10 years prior to the date of the survey	Four of the hypotheses are supported. The firm's reliance on ICT is positively related to speed as is the entry into a high number of markets and a high dependence on one key market. The hypothesis that integrated international channels has a positive effect on speed is partly supported
Coeurderoy and Murray (2008)	Speed of entry	No definition of speed	No theoretical discussion of the nature of the concept or its link to theory	To test the influence of similarity of the legal system of different markets, the regulatory hazard in the foreign market and international experience on speed of entry into foreign market	Speed is a dependent variable	Entry timing is measured as the number of years between firm start-up and entry in the foreign market	1396 foreign market entries (945 British and 451 German) performed by 375 new-technology-based firms not older than 10 years	The hypothesis stating that firms entering markets with a lower level of regulatory hazard with a higher speed is partially confirmed, while the hypothesis about the effect of international experience on speed is confirmed

TABLE I
RECENT STUDIES FOCUSING ON SPEED OF INTERNATIONALIZATION AND RELATED CONSTRUCTS (CONTINUATION)

Authors	Term of the concept	Definition	Conceptualization	Purpose	The role of speed	Measurement	Sample	Findings or outcome about speed
Kiss and Danis (2008)	Speed of internationalization	No definition of speed	No discussion of the nature or content of the concept, or its relation to theory	To develop six propositions on how a foreign market's institutional development influences the firm's social network, which is proposed to have an effect on speed	Speed is a dependent variable	Speed is proposed to be measured as the difference between the year of firm founding and year of its first international sale	Conceptual	The character of the ties in the network affects speed, but is moderated by the institutional development in the foreign market. Weak ties' effect on speed is especially important in markets with a high institutional development, while strong ties have a bigger importance for speed in markets with low level of institutional development
Acedo and Jones (2007)	Internationalization speed	Refers to Jones and Coviello's (2005) definition (speed is how much time has passed in order to achieve a specific target)	Run a conceptual discussion of speed and other similar concepts, but does not clarify the different nature or content. Link the discussion to born global theory	To develop and test a structural model of constructs suggested to directly and indirectly cause speed	Speed is a dependent variable	Speed was measured as the age of the firm at the entry into international market (export)	104 SMEs from a region in Southern Spain	Risk perception is a determinant of speed. Proactivity, international orientation and tolerance ambiguity are found to, through risk perception, influence speed
Weerawardena, Mort, Liesch and Knight (2007)	Accelerated internationalization, which includes speed, scope and extent	No definition of speed	No discussion of the nature or content of the concept. Nor does it link it to theory	To develop a conceptual model on dynamic capabilities' influence on the speed of internationalization	Speed is a dependent variable	Speed is proposed to be measured as the time to the first international activity (marketing or sourcing)	Conceptual	Marketing capabilities and the knowledge-intensity of the firm's products are conceptually proposed to directly influence speed
Zhou (2007)	Speed of born - global internationalization, but pace, speed and rapidity are used and treated as synonyms	No definition	No discussion of the nature of the concepts or its link to theory	To test hypotheses based on born globals that are driven by exploring and exploiting opportunities rather than accumulating experience by solving knowledge problem	Speed is dependent variable	Based on when the firm has achieved 20 % of total sales in foreign markets. This time period is subtracted from the firms' founding year which give an indicator of speed	775 new and private-owned exporting SMEs from six provinces in China	Entrepreneurial proclivity positively influences foreign market knowledge, which, in turn, leads to high speed of internationalization

TABLE I
RECENT STUDIES FOCUSING ON SPEED OF INTERNATIONALIZATION AND RELATED CONSTRUCTS (CONTINUATION)

Authors	Term of the concept	Definition	Conceptualization	Purpose	The role of speed	Measurement	Sample	Findings or outcome about speed
Zucchella, Palamara and Denicolai (2007)	Internationalization precocity	Precocity is the early start of international activities	Briefly argues that there is a difference between precocity, speed of international growth (rapidity) and pace occurring over time. Does not explain what the differences consist of	To develop a theoretical framework of factors affecting the speed (precocity) of internationalization	Speed is a dependent variable	Precocity is operationalized as the number of years from firm inception to the beginning of international sales	144 Italian SME firms	Belonging to an industrial district, pursuing a niche-strategy and various types of prior experience from international activity has a positive effect on precocity
Freeman, Edwards and Schroder (2006)	Early and rapid foreign market entry	No definition of early and rapid foreign market entry	Presents “early” and “rapid” as synonyms but does not discuss the meaning of these terms or its relation to theory	Since the literature shows that lack of economies of scale, lack of resources and risk aversion are the main constraints for SME internationalization, the paper aims to identify strategies, which help the firm to overcome these constraints and to achieve an early and rapid internationalization	Speed is a dependent variable	No measurement is given and no empirical evidence is reported on speed	A qualitative study (interview and focus group) based on three born global SME firms from Australia	The paper advances five strategies (extensive personal network, partnerships with large foreign firms, client followership, use of advanced technology and multiple modes of entry), which enable the SME firm to overcome the three main constraints and thereby achieve an early and rapid internationalization
Pla-Barber and Escribá-Esteve (2006)	Accelerated internationalization (speed, scope and extent)	No definition of accelerated internationalization or speed	Does not discuss the nature of the concepts or their relation to theory	To test six hypotheses on the effects of the top-management’s attitude, the global strategy, marketing and technological differentiation and the intensity of the network of relationships on accelerated internationalization	Speed is a dependent variable	Speed is measured as the number of years between the foundation of the firm and the first year of exporting	271 firms from Spain having an export of at least 25 % of total sales	The hypotheses suggesting that a proactive attitude of the management team and marketing differentiation advantages cause high speed are confirmed while the hypothesis that the intensity of the network of relationships with customers and suppliers lead to speed is partially confirmed

TABLE I
RECENT STUDIES FOCUSING ON SPEED OF INTERNATIONALIZATION AND RELATED CONSTRUCTS (CONTINUATION)

Authors	Term of the concept	Definition	Conceptualization	Purpose	The role of speed	Measurement	Sample	Findings or outcome about speed
Luo, Zhao and Du (2005)	Internationalization speed	No definition of speed	It has a long argument for why e-commerce companies internationalize with a higher speed, but does not discuss the meaning of speed	To test eight hypotheses, four concerning firm-specific characteristics and four concerning the foreign market's characteristics, assumed to positively influence the speed	Speed is a dependent variable	Speed is measured by the difference between the year of a firm's inception and the year it undertakes the first international expansion activity	93 American firms classified as internet companies	Top-management's experience and the firm's strengths in innovation and market are found to be positively associated with speed. The foreign market's 'internetability', technology supportiveness and legal protection of IPR and regulatory transparency have a positive impact on speed
Oviatt and McDougall (2005)	Internationalization speed	No definition of speed	Advances a structural model of internationalization speed, but does not discuss the nature or speed	To present a model proposing factors (technology, opportunity, competition, actor perception, knowledge and network relationships) influencing speed	Speed is a dependent variable	Speed to be measured in three ways: Time from the discovery of an opportunity and the first market entry, how rapidly do entries into foreign markets proceed and how rapidly are psychic distant market entered, and how fast are commitments made	Conceptual	Speed is influenced by the general technology development, the competition in the firm's industry and the firm's opportunity discovery, but mediated by the entrepreneur's perception and moderated by the firm's knowledge and network relationships
Wagner (2004)	Internationalization speed	No definition of speed	No discussion of the nature or content of the concept, but does relate it to learning and absorptive capacity under time pressure	To investigate the relationship between speed and firm performance (cost efficiency). It is hypothesized that this relationship exhibits an inverted U-curve	Speed is a moderating variable	Degree of internationalization is operationalized with the foreign sales-to-total sales ratio. Speed is proxied by the change in degree of internationalization from 1993 to 1997. The larger the change the higher the speed	83 large, stock-quoted German firms	The hypothesis is confirmed, which indicates that a balanced and moderate speed leads to increased performance, while a very high speed tends to be destructive and decrease the performance
Vermeulen and Barkema (2002)	Pace and speed are both used and treated as synonyms	No definition of pace or speed	No discussion of the nature or content of the concept, but does discuss it in relation to MNC and learning theories	To test four hypotheses on firm's performance as a result of speed, product scope, geographic scope and rhythm of established subsidiaries in foreign markets	Speed is a moderating variable	Speed is measured as the number of foreign subsidiaries divided by the number of years since the firm's first foreign expansion	It covered 1967-1992 and consisted of 22 Dutch firms' subsidiaries and 741 international expansions	The hypotheses are supported, which is explained by the firm's limited capacity to absorb and to transform gained experience into knowledge, which can be used to perform better

TABLE II
CONSTRUCTS AND MEASURES

Construct	Indicators	Label	Measurement
Speed of internationalization	Speed of international learning	LEARNING	Latent variable scores
	Speed of committing internationally	COMMIT	Latent variable scores
Speed of international learning	Speed of learning from repetition of international activities	REPETITION	Latent variable scores
	Speed of learning from diversity of international activities	DIVERSITY	Latent variable scores
Speed of learning from repetition of int'l activities	Speed of obtaining the first export order	FIRSTEXP	Number of years since the first export order/ number of years operating
	Speed of achieving regular exports	REGEXP	Number of years regularly exporting/ number of years operating
Speed of learning from diversity of int'l activities	Speed of geographic scope of a firm's international operations	COUNTR	Number of countries/ number of years operating
	Speed of diversity of entry modes used in international operations	MOES	Number of entry modes/ number of years operating
Speed of committing internationally	Speed of committing staff in international activities	PEOPLE	Number of employees in international activities/ number of years operating
	Speed of using a firm's foreign language skills	LANGUAG	Number of languages used/ number of years operating
	Speed of entry modes commitment	INVEST	Entry mode with foreign investment (yes/ no)/ number of years operating
International performance		PERFORM	
	Perceived success of int. activities (avg. last three years)	SUCCESS	scale 1(low)-10(high)
	International sales (avg. last three years)	EXPORTS	amount (million Euro / €)
	Perceived international profitability (avg. last three years)	PROFIT	scale 1(low)-4(high)
Resources (control)		RESOURC	
	Total assets	ASSETS	amount (million Euro / €)
	Total sales (avg. last three years)	SALES	amount (million Euro / €)
	Total workforce	EMPLOY	number of employees
Managers' experience (control)		MANEXP	
	Time responsible for international activity in the firm	YRESPF	Number of years
	Total time responsible for international activity in his/her career	YRESPT	Number of years

TABLE III
RELIABILITY AND AVERAGE VARIANCE EXTRACTED FOR CONSTRUCTS WITH REFLECTIVE INDICATORS

Construct/ Indicator	Mean	SD	Item reliability Loading	Construct reliability Composite reliability	Convergent validity AVE
Speed of learning from repetition of int'l activities				0.96	0.93
FIRSTEXP	0.60	0.29	0.95		
REGEXP	0.53	0.31	0.97		
Speed of learning from diversity of int'l activities				0.93	0.87
COUNTR	0.53	0.91	0.99		
MOES	0.10	0.17	0.86		
Speed of committing internationally				0.78	0.56
PEOPLE	0.08	0.11	0.95		
LANGUAG	0.11	0.17	0.72		
INVEST	0.07	0.09	0.50		
International performance				0.79	0.56
SUCCESS	5.98	1.84	0.70		
EXPORTS	2.17	3.08	0.91		
PROFIT	2.92	0.67	0.61		
Firm resources				0.92	0.79
ASSETS	7.54	8.94	0.90		
SALES	8.25	8.99	0.92		
EMPLOY	49.33	45.87	0.84		
Managers' experience				0.82	0.70
YRESPF	7.89	9.25	0.67		
YRESPT	11.41	10.28	0.97		

TABLE IV
ITEM WEIGHTS AND MULTICOLLINEARITY TESTS FOR CONSTRUCTS WITH FORMATIVE INDICATORS

Construct/ Indicator	Weight	t-value (bootstrap)	Tolerance	IVF
Speed of international learning				
Speed of learning from repetition of activities	0.54*	(1.98)	0.91	1.10
Speed of learning from diversity of activities	0.70***	(3.34)	0.91	1.10
Speed of internationalization				
Speed of international learning	0.63**	(2.53)	0.78	1.28
Speed of committing internationally	0.54*	(2.06)	0.78	1.28

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (based on a Student $t_{(499)}$ distribution with one tail).

TABLE V
DISCRIMINANT VALIDITY: FIRST ORDER LATENT VARIABLES CORRELATIONS AND SQUARE ROOT OF
THE AVERAGE VARIANCES EXTRACTED^a

Construct	REPETITION	DIVERSITY	COMMIT	PERFORM	RESOURC	MANEXP
REPETITION	0.96					
DIVERSITY	0.30	0.93				
COMMIT	0.29	0.44	0.75			
PERFORM	0.21	0.23	0.25	0.75		
RESOURC	0.02	-0.01	0.15	0.58	0.89	
MANEXP	0.13	-0.15	-0.19	0.01	0.02	0.83

^a Diagonal values in bold are the square root of the variance shared between the reflective constructs and their measures. In order to achieve discriminant validity diagonal elements must be larger than off-diagonal.

TABLE VI
THE RELATIONSHIP BETWEEN SPEED OF INTERNATIONALIZATION AND INTERNATIONAL PERFORMANCE:
A COMPARISON WITH TIME TO INTERNATIONALIZATION

Effects on the Endogenous Variable	Direct effect		Variance explained	Stone– Geisser Q^2
Speed of internationalization (our measure)				
Effects on international performance				
Speed of internationalization	0.24	***	0.071	
Firm resources	0.56	***	0.329	
Time to internationalization (operationalization 1)				
Effects on international performance				
Number of years before the first export order	-0.10	n.s.	0.006	
Firm resources	-0.62	***	0.377	
Time to internationalization (operationalization 2)				
Effects on international performance				
Number of years before becoming a regular exporter	-0.12	n.s.	0.013	
Firm resources	0.61	***	0.372	

n.s. = not significant; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (based on a one-tailed Student $t(499)$ distribution).