# A multidimensional perspective of SME internationalization speed: The influence of entrepreneur and firm innovation characteristics

## Highlights

1. Our findings support a multidimensional perspective on speed of SME internationalization.
2. Each dimension of speed is shaped by the specific orientations of entrepreneurs.
3. Ambidextrous innovation contributes to early internationalization.
4. Exploratory innovation is crucial for the speed of international deepening.

Innovation plays little or no role in the speed of geographic diversification

**Linda Hsieh**

*SOAS University of London, Thornhaugh Street, Russell Square, London WC1H OXG, United Kingdom*

**John Child**

b*University of Birmingham, Birmingham Business School, Edgbaston, Birmingham, B15 2TT, United Kingdom*

**Rose Narooz**

c *University of Glasgow, Adam Smith Business School, West Quadrangle, Glasgow, G12 8QQ, United Kingdom*

**Said Elbanna**

d *Qatar University, College of Business & Economics, Qatar University, P.O.Box 2713, Doha, Qatar*

**Joanna Karmowska**

e *Oxford Brookes University, Oxford Brookes Business School, Headington Campus, Oxford, OX3 0BP, United Kingdom*

**Svetla Marinova**

*Aalborg University, Department of Business and Management, Fibigerstrade 4, Aalborg East 9220, Denmark*

**Pushyarag Puthusserry**g,

g *Kent Business School, University of Kent, Canterbury, Kent, CT2 7FS, United Kingdom*

**Terence Tsai** and **Yunlu Zhang**

*China-Europe International Business School, 699 Hongfeng Road, Pudong, Shanghai 201206, China*

# A multidimensional perspective of SME internationalization speed: The influence of entrepreneurial Characteristics


## ABSTRACT

This paper contributes to a relatively under-explored area of research – a multidimensional perspective on speed of SME internationalization – by applying an actor-centered approach. It examines the influence of entrepreneurs on multiple dimensions of internationalization speed. Findings from a sample of 180 SMEs show that each dimension is predicted by a different set of entrepreneurial antecedents. Earliness of internationalization is associated with entrepreneurs' international experience and their perception of opportunities abroad as well as preference for an innovation strategy characterized by ambidextrous innovation and high R&D intensity. Speed of deepening is related to entrepreneurs' international experience, their orientation towards differentiation vis-à-vis competitors, and an innovation strategy focusing on exploration. Speed of geographic diversification is predicted only by entrepreneurs' orientation towards differentiation vis-à-vis competitors.



**Keywords:** Internationalization, SMEs, Earliness, Speed of deepening, Speed of geographic diversification

## 1. Introduction

International entrepreneurship [IE] studies focusing on the early and rapid internationalization of born globals and international new ventures (e.g. Knight & Cavusgil, 1996; Oviatt & McDougall, 1994; Coviello, 2015) have brought the notion of speed to the forefront of academic debate. They challenged the incremental and slow internationalization process described by the Uppsala/'stages' model (Bilkey & Tesar, 1977; Johanson & Vahlne, 1997). A key aspect of the debate between these two schools of thought concerns the role of actors/decision-makers in the internationalization process (Oviatt & McDougall, 2005). The Uppsala model underspecified the proactive role of entrepreneurs in assuming that firms are risk-averse to internationalization and that the knowledge required for progressive new market entries can be provided by a firm's experience with foreign operations. By contrast, the IE literature has emphasized the role of innovative, proactive and risk-taking behavior of key actors in facilitating early and accelerated international expansion (McDougall & Oviatt, 2000).

Internationalization speed has mainly been conceptualized as the time elapsed between a firm's foundation and its first international sales (Li et al., 2015, Kiss & Danis, 2008; Musteen et al., 2010; Rialp et al., 2005). However, this conceptualization has been criticized for failing to capture the complexity of speed, ignoring internationalization activities that occur after initial market entry, such as the increase over time in the percentage of foreign sales a firm has achieved and the number of new foreign countries it has entered (Prashantham & Young, 2011). The former indicates the "depth" of internationalization and the latter its "breadth". We echo the view of Chetty et al. (2014) that the concept of internationalization speed needs to be

theoretically grounded in the internationalization process model which encourages research to go beyond a limited focus on the speed at which internationalization is first undertaken. A starting point is to adopt a multidimensional perspective by taking into account both the time taken to achieve first foreign market entries and the time span over which firms achieve their current depth and breadth of internationalization (Casillas & Acedo, 2013; Chetty et al., 2014).

Each dimension of internationalization speed is different in nature and might therefore be predicted by a different set of antecedents. The antecedents of early internationalization have been extensively studied (e.g. Musteen et al., 2014). Previous studies have found that firms' technology and knowledge intensity, entrepreneurs' international experience, networks, foreign market knowledge, proactivity, international orientation and perception of opportunities and risks, contribute to an early internationalization process (Acedo & Galán, 2011; Acedo & Jones, 2007; Gassmann & Keupp, 2007; Ramos et al., 2011; Weerawardena et al., 2007). However, the antecedents of the other two dimensions (speed of international depth and breadth) are less known and require additional empirical investigation. Moreover, apart from three empirical studies by Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017), a multidimensional perspective of small and medium-sized enterprise (SME) internationalization speed remains relatively underexplored. The former two studies were restricted to the examination of the relationships between speed and performance, while the latter only studied the antecedents of speed of internationalization breadth. Further research is warranted that adopts a multidimensional perspective and identifies the antecedents of each dimension of internationalization speed.

SMEs tend to be characterized by an individualized leadership (Child & Hsieh, 2014). Individual entrepreneurs who specialize in "taking judgmental decisions about the coordination of scarce resources" (Casson, 2003: 20) are the main actors in SMEs. The significant role played by these individuals means that their profile and actions are highly likely to influence

their decision on the speed at which to expand their business internationally and commit the required resources (Oviatt & McDougall, 2005). However, SME entrepreneurs' behavioral drivers (such as intentions, motivations and perceptions) remain underrepresented in the internationalization decision and process literature (Cavusgil & Knight, 2015; Dimitratos et al., 2016; Muzychenko & Liesch, 2015).

The aim of this paper is to fill the gaps identified above by applying actor-centered view to examine how different dimensions of internationalization speed can be explained through the lens of entrepreneurial actors' international experience, their perception of foreign market opportunities, and their orientation towards differentiation and innovation strategies (R&D intensity and types of innovation). These predictors reflect the "international entrepreneurial orientation (innovativeness, risk taking and proactiveness)" of SME entrepreneurs (see review by Covin & Miller, 2014). The focus of our paper is important not only for its academic interest but also for its managerial implications. Each dimension of internationalization speed represents an internationalization path or strategic alternative. Research into factors shaping these strategic choices therefore promises to be of practical value.

This paper offers three main contributions to the internationalization speed literature. First, it informs existing debate (Casillas & Acedo, 2013) by providing additional empirical evidence for a multidimensional perspective on internationalization speed. Second, it complements Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017) by paying specific attention to the effect of entrepreneurs' characteristics on different dimensions of internationalization speed; this effect was somewhat overlooked in these studies. Third, previous studies of SME internationalization tended to overlook the nuances of exploratory and exploitative innovation (Child et al., 2017) and the pursuit of internationalization through both types of innovation (Martin et al., 2017). To the best of our knowledge, previous studies have not examined the relationship between entrepreneurs' orientation towards different types of

innovation strategy and internationalization speed. Our findings indicate the importance of teasing out different forms of innovation because they help to account for different dimensions of internationalization speed.

This paper proceeds as follows. We begin the next section with a discussion of a multidimensional perspective on internationalization speed, followed by explaining the actor-centered view, identifying postulated predictors of SME internationalization speed, and explaining the methodology employed to test the hypotheses. We then present the findings of our empirical study, concluding with their discussion, limitations and implications for future research.

## 2. Literature and development of hypotheses

### *2.1. A multidimensional perspective on internationalization speed*

Although there has been an ongoing debate about the concept of internationalization speed reflecting the different terminologies (e.g. pace, rhythm, precocity, early, rapid, accelerated, time to internationalization) introduced into previous research (see Chetty et al., 2014), there seems to be a consensus emerging that speed is a multidimensional construct. The seminal work of Oviatt and McDougall (2005) as well as Casillas and Acedo (2013) has been influential in providing a conceptualization of the multiple dimensions of internationalization speed. The former differentiated three dimensions of internationalization speed: 1) time between the discovery of an opportunity and the first foreign market entry, 2) how rapidly foreign market entries proceed and how rapidly psychically distant markets are entered, and 3) how quickly international commitments are made and how fast the percentage of international sales increases. The latter identified three underlying dimensions of speed, namely speed of change in a firm's international commercial intensity, speed of change in its breath of international markets, and speed of change in its resource commitment abroad.

Casillas and Acedo (2013: 16) defined speed of the internationalization process as "a relationship between time and a company's international events". The time period considered in previous studies of born globals and international new ventures was normally the time elapsed to achieve first international expansion (see Coviello, 2015). By contrast, the time period considered in mainstream international business research was the whole history of a firm to the date of study, which emphasizes the experiential knowledge a firm accumulates from international operations since its foundation – i.e. its learning. The international diversity captured by the dispersion of a firm's business across different geographic markets and the depth of international activities are important sources of learning in the course of internationalization (Casillas & Moreno-Menéndez, 2014). Chetty et al. (2014: 634) borrowed the concept from physics which defines speed as "an object's change of position or its movement" and it "includes the time it takes to travel a specific distance". They defined speed as "a relationship between the internationalization distance covered and the time passed to reach this" and they conceptualize the international distance covered as "the firm's current state of internationalization" (Chetty et al. 2014: 640). Hence, the time elapsed to achieve the firm's current state of internationalization can be considered equivalent to the age of the firm. Hilmersson and Johanson (2016) and Hilmersson et al. (2017) define speed as the time it takes from inception to reach a certain degree of internationalization.

We build on the above understanding, defining internationalization speed as the specific time period over which a firm has achieved a certain state of internationalization since inception. The states of a firm's internationalization include achieving the first foreign market entry, the current depth (the firm's ratio of foreign to total sales) and breadth of internationalization (geographic diversification). Hence the three dimensions of internationalization speed to be examined in this study are: 1) how early a firm makes first sales abroad since its founding (earliness), 2) the speed of deepening, and 3) the speed of geographic diversity. The specific

time period considered for the first dimension of speed is the time elapsed from the founding of firm to the first foreign market entry. In line with Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017), the specific time period considered for the last two dimensions of speed is the time elapsed from the founding of firm to the date of data collection. These measures capture the average speed of a firm that covers or travels a certain internationalization distance within a specific time period, i.e. the rate of international deepening per year and the rate of geographic diversification per year. The advantage of adopting an average measure is that it offers a representative indicator of a firm's overall internationalization evolution, bearing in mind that particular points in time (such as when maximum depth and breadth were attained) could be unrepresentative and also present problems for making comparisons between firms.

*2.2. Actor-centered view*

An actor-centered view emphasizes that outcomes derive from the characteristics and action models of the individuals who comprise a social setting (Little, 2014). It is based on the theoretical premise that human agency is crucial to explaining the behavior of organizations, in this case SMEs. It therefore questions the assumption that speed of SME internationalization can be adequately explained by reference only to a firm's external contingencies and its structural characteristics (Geppert & Clark, 2003). This view acknowledges the importance of decision-makers' perceptions and purposes, and therefore allows for the role of subjectivity. Subjectivist theory posits that "individuals hold different preferences, knowledge, and expectations, and more specifically, the pre-supposition that the contents of the human mind, and hence decision making, are not rigidly determined by external events" (Foss et al., 2008: 74). Subjectivism makes room for individuals' autonomy in decision-making and choices (Kor et al., 2007).

In the context of SME internationalization, the actors of concern are usually the individual entrepreneurs or group of decision-makers who discover or enact opportunities abroad and they are also described as "internationally entrepreneurial actors" (Oviatt & McDougall, 2005). IE literature has ascribed the variation in firms' internationalization decision to actor/entrepreneur-specific factors (Jones et al., 2011). Oviatt and McDougall (2005) highlighted entrepreneurial actors' personal characteristics and thinking as prime factors determining the speed at which international activities are to be performed. Moreover, Freeman and Cavusgil (2007) indicated that entrepreneurial actors' propensity for proactiveness, innovativeness, and risk-taking often reflects their attitude to accelerated internationalization. They found that *strategist entrepreneurs* are highly innovative, proactive, and risk taking. They focus on leading technology, want to build their business in lead markets, and show a high level of commitment to accelerated internationalization from inception by "leaping directly into strategic alliances or joint manufacturing rather than following a gradual process of outward linkages, such as exporting" (2007: 29).

An actor-centered view on internationalization decisions draws attention to the characteristics of SME entrepreneurs, more specifically, the formative relevance of their prior international experience and entrepreneurial orientation. International experience "creates the motivation and ambition to become born global, among other thing because it changes the perception of distance to other countries" (Madsen & Servais, 1997: 574). This perspective may also shed light on the speed of internationalization through highlighting that some entrepreneurs are able to identify opportunities in foreign markets that others overlook. Moreover, the strategic orientation of SMEs is often manifested by their leading actors' entrepreneurial orientation, such as proactive motivations for internationalization, an innovation orientation, and a risk-taking attitude towards international opportunities (Hagen et al., 2012). Accordingly, we will focus on the reasons that entrepreneurs as key SME actors have

for internationalization (perception of foreign market opportunities, orientation towards differentiation), as well as their orientation towards innovation strategies (types of innovation and R&D intensity). Entrepreneurs adopting the strategy of offering innovative and high value-added products that have the potential to serve a worldwide clientele, are more likely to see their firm internationalize early and launch products in several foreign markets (Cavusgil & Knight, 2015). Drawing on insights from the actor-centered view, we develop a conceptual framework (Figure 1) with constituent hypotheses concerning the impact of entrepreneurs on different dimensions of internationalization speed.

[Figure 1 about here]

*2.3. Hypotheses development*

*Prior international experience.* Prior international experience of entrepreneurs or management teams in SMEs has been found to contribute to early internationalization as it can be drawn upon to compensate for the lack of organizational knowledge of foreign markets (e.g. Bruneel et al. 2010; Love et al., 2016; Zucchella et al., 2007). Bruneel et al. (2010), for example, conclude that when firms have less experiential learning in foreign markets, the effect of entrepreneurs' prior international experience on internationalization matters more. SME entrepreneurs with past international experience have a greater propensity to delay less in obtaining foreign sales after start-up because experience mediates their perception of distance to foreign countries (Madsen & Servais, 1997; Reuber & Fischer, 1997). In addition, they are more likely to have a greater awareness of potential and emerging international opportunities and tend to be more proactive to pursue those opportunities, thus leading them to internationalize early and achieve a larger scale and scope of internationalization (Chandra et al., 2009; De Clercq et al., 2012; Kuivalainen et al., 2012).

Moreover, experience as a foundation for entrepreneurs' intuition (Elbanna & Fadol, 2016) enhances their ability to learn and access the relevance of past events efficiently (Wally & Baum, 1994). It can also simplify complex situations. When decision makers use intuition, they may make judgments from either heuristics or analogical reasoning that draws upon experientially established cognitive structures and compares between previously experienced international market situations and those newly encountered (Jones & Casulli, 2014). The international experience of entrepreneurs might be translated into heuristics or decision-rules that support rapid internationalization (ibid). Analogical reasoning can increase an entrepreneur's reasoning capability, speed, and expertise so that it may speed up decisions on internationalization and influence successive internationalization market entries (ibid). Hence:

> **Hypothesis 1:** The international experience of SME entrepreneurs is positively associated with a) earliness of internationalization, b) speed of deepening, c) speed of geographic diversification.

*Perception of opportunities abroad.* The perception that foreign markets offer favorable opportunities is among the subjective characteristics of SME entrepreneurs that are influential in shaping internationalization decisions (Hutchinson et al., 2006). Compared to the entrepreneurs of incrementally internationalizing SMEs, those of international new ventures or born-globals tend to be more positive about overcoming barriers to international expansion, perceive international markets as providing opportunities, and as being less risky (Chetty & Campbell-Hunt, 2004; Dimitratos et al., 2012). Additionally, they view internationalization as an opportunity for value creation as well as taking advantage of market inefficiencies (Anokhin et al., 2011; Di Gregorio et al., 2008; Kalinic & Forza, 2012). A high self-efficacy towards internationalization among entrepreneurs "results in a reduced risk perception and increased expectation of more positive outcomes in a given situation" (Muzychenko & Liesch, 2015:

707). Thus, it can be argued that if entrepreneurs exhibit a positive view towards internationalization, see it more as an opportunity than a threat, and perceive foreign market opportunities to be more attractive than domestic ones, they are more likely to commit resources to exploit international opportunities early (Acedo & Galán, 2011; Moen, 2002) and to increase the international presence of their company (Kiss et al., 2013). This leads to:

> **Hypothesis 2:** SME entrepreneurs' perception of opportunities abroad is positively associated with a) earliness of internationalization, b) speed of deepening, c) speed of geographic diversification.

*Orientation towards differentiation vis-à-vis competitors*. The strategic posture of individual entrepreneurs is critical to internationalization decision-making (De Clercq et al., 2014). Entrepreneurs' recognition of the possibility of achieving differentiation vis-à-vis competitors through having a market presence abroad often contributes to the decision to internationalize early. Additionally, their desire to build a positive image to defend competitive advantages has been suggested as a key and proactive motive for firm internationalization (Hutchinson et al., 20007). International new ventures typically exploit their innovative technology early in lead markets in order to show that they are capable of serving key customers (Crick, 2009). Similarly, Vanninen et al. (2017) found that a global entrepreneurial mindset willing to seize multiple sources of opportunities abroad and achieving this through visibility, reputation, and being close to clients and partners in strategic markets, could explain the use of high-commitment market entry strategies from inception in the rapid multinationalization process of Finnish born micro-multinationals.

Moreover, new ventures from developing countries such as China and India are more likely to internationalize into developed economies (as opposed to other emerging economies) because these advanced economies can provide potential reputational benefits and learning

opportunities (Yamakawa et al., 2013). Seifert et al. (2012) found that some Brazilian SME entrepreneurs considered selling abroad as a way to differentiate their firm in the domestic market through obtaining international acceptance and the status of being an exporter, and consequently decided to internationalize early and into more distant markets, even if the decision did not seem economically justifiable in the short term. Their finding supports Oviatt and McDougall's (1994) claim that significant competitive advantages can be gained by new ventures using their resources and selling their outputs to operate immediately in multiple countries. In this sense, we expect that SME entrepreneurs who prefer differentiation-based competitive advantages will internationalize early and pursue paths to rapid international growth as a way to sustain positional advantages. Also that, given the possibility of learning, SMEs will increase the scale, scope, and commitment of their international presence in order to stay ahead of their competitors. This suggests:

> **Hypothesis 3:** SME entrepreneurs' orientation towards differentiation vis-à-vis competitors is positively associated with a) earliness of internationalization, b) speed of deepening, c) speed of geographic diversification.

*Types of innovation.* A positive relationship between innovation and exporting among SMEs has been widely reported (Golovko & Valentini, 2011; Love & Roper, 2015). Innovation is a key component of a product differentiation strategy which enables firms to rely on their technological expertise to compete in international markets and in turn to contribute to international sales growth (Lisboa et al., 2011). In a study of Spanish SMEs, Ramos et al. (2011) found that entrepreneurs from technology-intensive firms who consider product innovation as a fundamental component of competitive strategy internationalize their firms significantly earlier than main competitors.

Innovation can take various forms even if we confine the scope of the term to the generation of new or improved products and services. It can be radical, involving what March (1991) termed “exploration”, namely the generation of new knowledge to produce new products or services. It can also be incremental involving the “exploitation” of already available knowledge for purposes of adapting or improving existing products or services.

Exploratory innovation is a strategy option characterized by the highest level of innovation orientation. It provides a means for new ventures to achieve international market entry and growth. But, it is riskier, more expensive, and has less certain outcomes and longer time horizons (Prashantham, 2015). In the pursuit of more sustainable growth and positional advantages, the entrepreneurs of resource-deficient SMEs may have to complement exploratory innovation with exploitative innovation which permits faster time to market and facilitates the achievement of short-term positive performance. In knowledge-based SMEs, such as biotech firms, entrepreneurs often adopt the policy of complementing discovery work with more routine analytical ‘contract research’, exploiting existing knowledge, in order to provide cash flow to sustain their business during the long product development cycle (Child et al., 2017). Hughes et al. (2010) and Martin et al. (2017) found that ambidextrous innovation (the possession of both types of innovation capability) contributes to the performance of SMEs that internationalize within two years of their founding. Firms that shun exploration could be vulnerable to stagnation threatening their future viability, whereas firms that avoid exploitation could suffer from the loss of short-term efficiency (Smith & Tushman, 2005). In view of the above, we argue that the adoption of an ambidextrous innovation policy enables SMEs to internationalize early and to lower the risk of failure.

On the one hand, an exploitative innovation policy allows SMEs to leverage existing knowledge to quickly enter foreign countries similar to their home country, and on the other hand, an exploratory innovation policy helps generate potential positional advantages and avoid

technological obsolescence. Post-entry internationalization therefore often combines exploration and exploitation activities across product and market functions. However, smaller firms frequently lack the requisite human and financial resources to create the structure to manage increasing organizational complexity and to accrue value from ambidextrous innovation (Voss & Voss, 2013). To avoid spreading their limited resources too thinly, SMEs adopting the strategy of pursuing product ambidextrous innovation are therefore less likely to engage in a high speed of subsequent internationalization.

By contrast, focusing on exploratory innovation may delay SMEs' internationalization. However, if SMEs can successfully accomplish exploratory innovation, they can acquire first-mover advantages that competitors often find it difficult to imitate (Mueller et al., 2013). We suggest that if an exploratory innovation policy is successful in the early stage of internationalization, it allows SME entrepreneurs to maximize international growth opportunities offered by product innovation. As a result, entrepreneurs are more likely to increase the proportion of international sales as rapidly as possible to realize scope economies through a concentrated regional market strategy. A broad regional market strategy increases the likelihood of born-global failures due to the increasing cost of managing sales in very diverse geographic regions (Patel et al., 2016). Hence, we pose the following hypotheses:

**Hypothesis 4.1:** SMEs focusing on a strategy of exploratory innovation will tend to a) internationalize later, and exhibit b) higher speed of deepening, c) lower speed of geographic diversification, in comparison to those focusing on an exploitative innovation strategy.

**Hypothesis 4.2:** SMEs pursuing an ambidextrous innovation strategy will tend to a) internationalize earlier, and exhibit b) lower speed of deepening, c) lower speed of geographic diversification, in comparison to those focusing on an exploitative innovation strategy.

*R&D intensity.* R&D intensity has been identified as an important determinant of SME export intensity and diversification (Raymond et al., 2014). Entrepreneurs' decision to invest in specialist R&D personnel enhances the capability of their SMEs to develop firm-specific advantages in knowledge-based resources which could be leveraged across different foreign markets (Oviatt & McDougall, 1994). Faced with increasing competition and/or opportunities presented by global demand, some entrepreneurs may seek to derive firm competitive advantages by commercializing new products or services in multiple country markets, thus increasing the expected returns to their R&D (D'Angelo et al., 2013). Also small new ventures with high R&D intensity tend to internationalize within three years of founding (Li et al., 2015). The need to amortize the high R&D costs typical of high-tech firms often pushes new ventures to expand more quickly into international markets (Andersson et al., 2014).

Moreover, some authors (e.g. Filipescu et al., 2013) found that R&D intensity and international breadth and depth have a reciprocal relationship. They suggest that entrepreneurs of exporting firms can take advantage of their participation in international markets by acquiring and absorbing new knowledge inputs not available in domestic markets. Therefore, entrepreneurs can enhance the existing knowledge base of their firm by increasing its exposure to a richer source of knowledge through subsequent international diversification, which in turn is helpful to maintain the firm's competitiveness and international market position. Therefore, we hypothesize the following:

**Hypothesis 5**: R&D intensity is positively associated with a) earliness of internationalization, b) speed of deepening, c) speed of geographic diversification.

## 3. Methodology

### *3.1. Sampling, data collection and coding*

Data were collected for this study between 2012 and 2014 from the clothing, software and biotechnology industries in six economies, namely, the Arab Middle East, China, Denmark, India, Poland and the UK.[1] Firms were selected for study according to pre-determined criteria in order to maintain consistency within a research design that incorporated systematic contextual contrasts. The first criterion was that selected firms in Denmark, Poland and the UK should employ fewer than 250 employees and have turnover of not more than EUR 50m or balance sheet total of not more than EUR 43m in order to ensure that they fall in the SME category according to the EU definition.[2] For comparative purposes, the same employment size criterion was applied when selecting firms from the other three economies. The second criterion concerned the choice of the three industries, which was informed by Bell et al.'s (2003; 2004) typology distinguishing between traditional, knowledge-intensive and knowledge-based SMEs. Clothing is an example of traditional industry in which the advanced knowledge is not intrinsic to market offerings. Software and biotech firms, which respectively fall into the knowledge-intensive and knowledge-based industry categories, rely more on advanced knowledge. Software firms usually are not inherently knowledge-based and they tend to use advanced knowledge to develop new offerings. In contrast, biotech firms can usually be considered as 'first-movers' in niche markets and new knowledge is intrinsic to their market offerings. A third sampling criterion involved the inclusion of two contrasting categories of economy (developed economy and developing economy) in order to combine avoiding the risk of drawing conclusions from a single national context with the ability to control this context when required. A fourth criterion was that the selected firms must be active in outward international business and have generated sales revenues from abroad. The sample was a

[1] The Arab Middle East in this sample is actually a region consisting of three countries, Egypt, Jordan and the UAE. However, it is treated as one unit.

[2] The definition was obtained from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003H0361 Accessed October 26, 2017.

non-probability purposeful one. It did not aim to represent a given population, but rather to provide a set of firms that met the criteria described above. An equal number of SMEs located in developed and developing economies were selected. The choice of countries within these two categories reflected the availability of local researchers/authors known to have the necessary language and subject-area competences and the understanding of the research context. The author(s) responsible for data collection in each country contacted potential SMEs that met the predetermined criteria in terms of firm size, the type of industry, the level of home economy development, and engagement in international business. Data from 30 SMEs in each economy were collected and evenly distributed between the three industries. In total 334 candidate firms were approached. Those firms agreeing to participate were added to the sample until the target sample of 180 SMEs was met (giving a response rate of 54 %).

Semi-structured interviews incorporating a mixture of closed-ended and open questions were designed to collect data from the principal decision-maker on internationalization in each SME. Using the on-site visits approach helped to better understand the sampled firms' activities. The interviews lasting between one and two hours were digitally recorded and later transcribed. The interviewers were normally full members of the project team and all had competences in the field of international business along with extensive local area knowledge. For interviews conducted outside the UK, interviewers were bilingual in the local language and in English (cf. Welch & Piekkari, 2006).

In order to ensure consistency of measures and reliability within the multi-country and multi-case research process, the interview schedule was standardized to serve as a replication guide for the researchers and hence enhance data collection stability (Miles et al., 2014; Silverman, 2009). Various procedures were followed to control for the use of multiple interviewers and achieve consistency and a common understanding of all questions in general and of the meanings to be attached to qualitative responses in particular. These include: (1)

strict control of the interview process (Harris, 2000) and training of the interviewers concerning issues such as the identification of follow-up questions, use of probes, establishment of rapport, and avoidance of leading questions (Boutain & Hitti, 2006); (2) the involvement of the second author in several interviews conducted in four countries other than his own; (3) the participation of all project members in four three-day workshops, which were further supported by several face-to-face meetings between sub-groups within the project, and (4) 32 regular Skype conference calls among project members, all of which were at least one hour long and minuted. This was further reinforced by the exchange of regular emails each week.

Transcripts of initial interviews were analyzed at one of the workshops to ensure common understanding and interpretation. Each project member undertook the cross coding of six cases from one of the other countries and subsequently the initial coding scheme was refined. Overall inter-coder agreement in the cross-coding was 79.7%. After six months of discussions among project members, consensus was reached in all instances of initially different interpretation. All transcripts were then coded using the refined coding scheme. To further reduce validity concerns and to check for coding anomalies, frequency runs and tabulations were performed after coding and entering the data into an SPSS data file.

### *3.2. Measures*

Table 1 provides details of the measurement of the variables that this paper used. It indicates the relevant questions asked in the interviews and how replies were operationalized. Some items are factual in nature and are recorded either directly (e.g. R&D intensity) or in terms of their presence or absence (e.g. exploratory innovation). Others, notably SME entrepreneur's reasons for internationalization, are perceptual in nature and are coded from an analysis of interviewee statements.

The measure of *internationalization speed* is multidimensional, consisting of *earliness*, the

speed of *deepening*, and the speed of *geographic diversification*. Earliness was measured by the time taken to make first international sales since founding (e.g. Musteen et al. 2010; Ramos et al. 2011). In line with previous empirical work on internationalization speed (Chetty et al., 2014; Hilmersson & Johanson, 2016; Hilmersson et al., 2017), the other two dimensions were operationalized in terms of mean speed. The denominator, time, was measured by the number of years operating, i.e. "the time elapsed from firm inception to the date of data collection" (Hilmersson & Johanson, 2016: 83). The speed of deepening was measured by dividing the ratio of international to total sales by time (Hilmersson & Johanson, 2016). The speed of geographic diversification was measured by dividing the geographic diversity by time. Geographic diversity was calculated as the total number of geographic regions that SMEs operate outside their home region [Each was scored 1 if mentioned, otherwise 0: Europe, North America, South & Central America, MENA (Middle East & North Africa), Oceania, East & South East Asia, South Asia (India, Pakistan, Bangladesh), Sub-Saharan Africa]. For example, if a Danish or Polish SME exports only within the Europe, its geographic diversity would be coded as 0. The maximum score for geographic diversity would be 7. The *international experience* of entrepreneurs was operationalized as whether they had previous experience in international business prior to joining or founding the firm (Reuber & Fischer, 1997). To assess entrepreneurial orientation, we asked SME entrepreneurs about their reasons for internationalization and their orientation towards innovation strategis. Two second-order themes which captured some aspects of entrepreneurial orientation arose in open-ended interview responses: *perception of opportunities abroad*, and *orientation towards differentiation vis-à-vis competitors*. The Appendix indicates how they were derived from interviewees' statements. Entrepreneurs' orientation towards innovation strategies were assessed in terms of their decision on the *types of innovation* activity and *R&D intensity*. Previous research (e.g. Child et al., 2017; Miller & del Carmen Triana, 2009) has supported the

use of a firm's R&D intensity measured by R&D staff as a share of the total employment as an appropriate proxy for its *innovation*. R&D intensity was then dichotomized into high and low intensity using a median split.[3] However, because R&D intensity does not readily capture innovation in lower-technology industries such as clothing, we also assessed innovation activities with reference to exploration, exploitation, and ambidexterity (He & Wong, 2003; March, 1991).

Moreover, a number of contextual (level of home economy development, domestic market size) and firm factors (network contacts, firm size, firm international experience, family ownership) known potentially to influence internationalization speed are included as control variables in this study, since its aim is to focus on actor-related rather than contextual and contingent influences on internationalization speed. There are divergent arguments over whether and how level of home economy development will predict internationalization speed. One argument stems from the argument of 'learning by exporting' (see review by Love & Roper, 2015). Insofar as SMEs from developing (rather than developed) economies are endeavoring to catch up with their competitors from other economies in terms of innovation and product competitiveness, they may be encouraged not only to begin exporting early but also to enlarge the depth and spread of their foreign markets as rapidly as possible. Counter to this argument is the fact that SMEs located in developing economies tend to suffer from institutional voids (Mesquita & Lazzarini, 2008), focus on less technological intensive business with lower

[3] The variable of R&D intensity measured by R&D staff as a share of the total employment has a substantially positive skewness (skewness value is 5.49) and the data contains 16 zero scores. As suggested by Tabachnick and Fidell (2007), the variable should be transformed into LG10 (X + K). K is a constant. When a small constant value of 1 is added to the scores, the problem of skewness still exists (skewness value is 2.84). Additionally, the transformed data may not characterize the original data and it can lead to the incorrect interpretation of the hypothesized result. Hence, a binary variable was created using a median split. SMEs considered high in R&D intensity (based on the sample median) are those with greater than 15.61 percent of employees engaged in R&D activities. SMEs with 15.61 percent of employment or lower in R&D are coded as low in R&D intensity.

product development costs (Kiss et al., 2012), and rely more heavily on social ties to facilitate their internationalization than do SMEs in a developed country (Narooz & Child, 2017), which in turn, would restrict the range of foreign markets in which they can compete. In our sample, Denmark, Poland and the UK are classified as developed economies, while the Arab Middle East, China and India are classified as developing economies.[4] Domestic market size may also be important in explaining early internationalization, the depth and breadth of international sales, as indicated by Hennart (2014) and Fan and Phan (2007). While early internationalizing firms tend to come from economies with a smaller domestic market, they have also been found in economies with a large domestic market (Knight & Liesch, 2016). Domestic market size was measured by the country GDP data from the World Bank (Duanmu, 2012).[5]

Among firm-level controls, the number of network contacts was measured by the total number of categories of network contact considered by interviewees as key sources of assistance for their firm's internationalization. Some studies (e.g. Fernhaber & Li, 2013; Park et al., 2015) suggest that the greater number of network contacts can facilitate and support internationalization activities of SMEs, especially for those entrepreneurs with limited or no previous international experience. However, this effect was not found by Felzensztein et al. (2015). Firm size has also been shown in previous studies (e.g. Bonaccorsi, 1992; Chetty et al., 2014) to influence internationalization decisions and the speed of the internationalization process suggesting the premise that larger firms tend to have a greater capacity to adopt more

[4] While Poland, along with other Central and Eastern European economies, was considered to be emerging in the 1990s (Meyer & Peng, 2016), it is today classified as a developed economy by the United Nations – see http://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.pdf, accessed 26 January 2016.

[5] Average GDP data for the period 2010-2014 was used in the regression analyses and reported in Table 3. We also conducted an additional regression analysis by substituting for the average GDP data with GDP data from 2011. The results are consistent with those reported in Table 3. Hence, it can be concluded that using either average GDP data for the years just prior to and during the study period rather than the GDP data from the year before the data collection started does not affect the results of regression and hypothesis testing.

resource-consuming strategies. A firm's international experience was measured by the number of years during which a firm had been engaged in sales to foreign markets (Child et al., 2017). The accumulation of international market knowledge helps mitigate the level of perceived risk associated with further international expansion and could thus encourage entrepreneurs to increase the range/scope of foreign market entries and to increase international revenues through more effective sales efforts (Johanson & Vahlne, 1997; Prashantham & Young, 2011). Accordingly, they could potentially affect the speed of deepening and geographic diversity. Research on the speed of internationalization of family-owned firms is controversial. Some authors argue that they internationalize later and slower (see review by Pukall & Calabrò, 2014), while others suggest that family firms are fast internationalizers (Hennart et al., 2017; Marinova & Marinov, 2017). In the sample, 51 (28.3%) of the firms were family owned. [6]

[Table 1 about here]

## 4. Findings

### *4.1. Test of hypotheses*

Table 2 presents the means, standard deviations and correlation coefficients of the variables. Based on Field (2013), the Phi coefficient was used to estimate the strength of association between two binary variables and Cramer's V was used to assess the correlation between types of innovation and binary variables. Biserial correlation was used to estimate the strength of associations between binary and continuous variables (ibid). None of the correlations between independent variables exceed 0.44.

[6] An additional 21 firms (11.7% of the sample) were wholly-owned owned by an individual and not classified as family-owned. The other categories of ownership were group of non-family shareholders; dispersed shareholding; venture capital/private equity; university; cooperative/collective, government authority.

[Table 2 about here]

Considering the hypotheses of this study, we conducted a series of ordinary least squares regressions and the results are shown in Table 3.[7] Model 2 shows that the earliness of internationalization was positively related to SME entrepreneurs' international experience ($\beta$ = 0.253, $p < 0.01$), their perception of opportunities abroad ($\beta$ = 0.258, $p < 0.01$) and their orientation towards a high R&D intensity ($\beta$ = 0.197, $p < 0.05$) and ambidextrous innovation strategy ($\beta$ = 0.158, $p < 0.05$). Their orientation towards differentiation vis-à-vis competitors and exploratory innovation strategy were not significant as evidenced in Model 2. These findings provide full support for H1a, H2a, H4.2a, and H5a, but not for H3a and H4.1a.

Model 5 shows that the speed of deepening was positively associated with SME entrepreneurs' international experience ($\beta$ = 0.183, $p < 0.01$), and their orientation towards differentiation ($\beta = 0.145, p < 0.05$) and an exploratory innovation strategy ($\beta = 0.180, p < 0.01$). R&D intensity is marginally significant ($\beta$ = 0.137, $p < 0.10$). The perception of opportunities abroad and ambidextrous innovation were not significant. These results demonstrate full support for H1b, H3b, H4.1b, and some support for H5b, but not for H2b and H4.2b.

As shown in Model 8, the speed of diversifying into different geographic regions was positively related to SME entrepreneurs' orientation towards differentiation vis-à-vis competitors ($\beta = 0.157, p < 0.05$), thus confirming H3c only. H1c, H2c, H4.1c, H4.2c, and H5c are rejected as the variables of entrepreneurs' international experience, perception of opportunities abroad, the strategies of exploration, ambidextrous innovation and high R&D intensity were not significant.

[7] Due to non-availability of data in one firm on prior international experience of decision-makers, in one firm on the speed of geographic diversification, in one firm on the number of network contacts, and in two firms on the number of R&D staff, the N for the analyses of earliness and speed of deepening in Table 3 is 176. The N for the analysis of speed of geographic diversification is 175.

As to control variables, Models 6-8 show that SMEs from developing economies are more likely to engage in higher speed of geographic diversification. Domestic market size and family ownership were significant in Model 1 where only control variables were included. Models 1-5 show that firm size was significantly negatively related to the earliness and speed of deepening, contrary to the findings of some previous studies. Models 3-8 show that the international experience of firm was significant. Models 4 and 7 examine the non-linear effect between firm international experience and speed of deepening as well as speed of geographic diversification.[8] The positive coefficients of the squared terms shown in both models suggest that the relationship is curved and U-shaped. This implies that speed of deepening and speed of geographic diversity decrease when SMEs' accumulation of international market knowledge is low. SMEs have to unlearn established routines, such as those on intra-regional markets, in order to overcome inter-regional liability of foreignness and to increase speed of geographic diversification. Overall, the number of network contacts does not appear as important, as expected and predicted by previous studies.

[Table 3 about here]

*4.1. Tests of robustness*

We took several actions to increase confidence in our results. First, we tested whether or not the results remain robust after the inclusion of additional controls. For instance, based on previous studies which suggest that early internationalization among SMEs is a phenomenon typical of high-tech industries oriented towards innovation (Jones et al., 2011; Knight & Cavusgil, 2004; Onetti et al., 2012; Zander et al., 2015), one might hypothesize that industry differences across

[8] The scatterplot of firm international experience versus speed of deepening indicates a non-linear relationship. The scatterplot of firm international experience versus speed of geographic diversity also shows a non-linear relationship. To take into account of these non-linear relationships, the square of firm international experience was included in the regression analyses.

the clothing, software and biotech sector could product different results in internationalization speed.[9] But the regression results of Models 10, 13, 16 in Table 4 provide strong evidence against this alternative explanation, indicating that our main results are not affected by unobserved industry heterogeneity. In fact, early internationalization has also been found in more traditional and low-tech sectors, according to some previous research (e.g. Mort et al., 2012). Another commonly studied driver of early internationalization is entrepreneurs' proactivity (Cavusgil & Knight, 2015).[10] After the inclusion of proactivity as a control variable, the main results shown in Models 11, 14, 17 were consistent with those findings reported in Table 3.

Second, we also tested the robustness of our main results by running additional regression analyses without including the control variables, in order to reduce the concerns about the possibility that the results may be due to the correlations between independent and control variables. The results in Models 9, 12, 15 suggest that our findings were not affected by collinearity. Third, we checked for possible multicollinearity. All the variance inflation factor values reported in Table 3 were below the suggested threshold of 10 (Hair et al., 2009). Additionally, we conducted ridge regressions which have been suggested useful for diagnosing and dealing with potential multicollinearity issues as the method minimizes prediction error and enables assessment of the stability of parameter estimates (Bornemann et al., 2015; Mahajan et al., 1977). The results suggest that multicollinearity was not a concern in this paper.[11] We can

[9] Two dummies (software, biotech) were created. Clothing industry was treated as the reference group.

[10] Proactivity is a binary variable constructed from replies to a question on how the SME's internationalization started. The firm was classified as proactive if its entrepreneur had taken the initiative to find international customers as opposed to reacting to a serendipitous approach.

[11] We used NCSS statistical software to carry out ridge regressions to include all the independent and control variables in each model. The Eigenvalues of correlations results indicate all condition numbers are less than 10, thus multicollinearity is not a problem. And the generated standardized coefficients and R-Squared in ridge

conclude that the correlations among the independent variables did not affect our results.

[Table 4 about here]

## 5. Conclusions

### *5.1. Discussion*

This paper, adopting an actor-centered approach, set out to examine the influence of entrepreneurs' characteristics (international experience, perception of foreign market opportunities, orientation towards differentiation and innovation strategies) on the multiple dimensions of SME internationalization speed. It offers several contributions to the literature. First, it informs existing debate (Casillas & Acedo, 2013) by providing additional empirical evidence for the relevance of a multidimensional perspective on internationalization speed. More specifically, it extends the studies of Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017) by applying an actor-centered view and paying specific attention to the role of entrepreneurs which was somewhat overlooked in these studies. Our findings suggest that earliness, speed of deepening, and speed of geographic diversity can be viewed as three different strategic alternatives, although they are not mutually exclusive. As Table 3 shows each dimension of internationalization speed is predicted by a different set of factors, indicating how each choice is shaped by entrepreneurs' subjective perception, thinking and preference. Additionally, given that previous studies (e.g. Acedo & Jones, 2007) have generally focused on the impact of entrepreneurs on just one dimension of internationalization speed – earliness – this study advances knowledge by demonstrating how entrepreneurs might influence other dimensions of speed including deepening and geographic diversification. For example, SME entrepreneurs' perception of opportunities abroad predicted early

regressions were similar to those reported in the ordinary least squares regressions shown in Table 3. Due to paper length limitations, the results are available upon request.

internationalization but not speed of deepening and speed of geographic diversification. The latter two dimensions were predicted by entrepreneurs' orientation towards differentiation to bolster firm competitiveness. This contrasting finding suggests that although entrepreneurs may initiate internationalization because they perceive foreign market opportunities to be more attractive than domestic ones, some may not be motivated to exploit further internationalization opportunities because they do not see these as an opportunity to differentiate themselves from their competitors. It appears that the decision of increasing either speed of deepening or speed of geographic diversification is a deliberate strategic choice of SME entrepreneurs, especially if they think doing so will enable them to obtain reputational benefits and learning opportunities which could potentially be useful for defending their firm competitive advantages.

Moreover, our findings confirm the argument that entrepreneurs' international experience induces firm growth through internationalization and shapes the direction of that growth (Tan & Meyer, 2010; Zucchella et al., 2007). The experiential knowledge of entrepreneurs compensates for the lack of organizational experience in internationalization at the time of founding, prepares them for capitalizing on the learning advantages of newness and helps to alleviate the liabilities of foreignness and newness. Although the capacities of SME decision makers at the time of founding are likely to set a limit to the extent of internationalization, they may enhance those capabilities by focusing experiential learning over time from a specific market or markets within the same region. In doing so, they enhance early internationalizing firms' chance of survival because intra-regional liability of foreignness may be lower than inter-regional liability of foreignness (Sleuwaegen & Onkelinx, 2014), which enables entrepreneurs to increase the proportion of international revenues through more effective sales efforts in extant markets.

Our findings of entrepreneurs' international experience and firm international experience provide preliminary evidence in support of Prashantham and Young's conceptual argument

(2011) that specific market knowledge in the form of experiential knowledge needs to be transformed into objective and neutral market knowledge, so that market knowledge can be easily transferred and applied, which in turn facilitates the speed of post-entry. More specifically, our results imply that although entrepreneurs' experiential knowledge is beneficial for increasing speed of deepening, they need to develop organizational mechanisms to facilitate the acquisition of market knowledge and to transform individualized experiential knowledge into an explicit and objective form. The procedure or routine established would provide guidance on how to do things in similar situations. On the other hand, our results also imply that the international experience of firms in a specific market region or home region may inhibit speed of geographic diversification as the procedure or routine that has been developed over time for operating in SMEs' home region or a narrow set of markets has become embedded and hence inflexible. To increase the speed of geographic diversification, firms need to unlearn or adjust their established country-specific or intra-regional routines or procedures for operating in other regional markets.

Furthermore, previous studies (e.g. Hughes et al., 2010; Martin et al., 2017) only address the consequences of different types of innovation for SME performance. They offer limited explanation of how the nuances of exploratory and exploitative innovation will predict internationalization speed. The present study contributes to this gap in knowledge by showing that it is important to distinguish entrepreneurial orientations towards different types of innovation strategy because they have varying effects on the different dimensions of internationalization speed. Exploratory innovation strategies help explain speed of deepening (increasing the proportion of international sales to total sales) but not speed of geographic diversification. There are several possible explanations for this finding which deserve to be investigated further. One is that exploration heavily backed by R&D enables an SME to capture a large share of a few targeted big foreign markets (such as the USA), and that this is sufficient

to satisfy the firm's performance aspirations. Another is that in view of the limited resources typical of SMEs, their engagement in expensive exploratory innovation may well be highly focused and specific to the needs of certain foreign markets only. Ambidextrous innovation strategies only contribute to early internationalization but not to other dimensions of internationalization speed. High R&D intensity is important to early internationalization and moderately important to speed of deepening. These results suggest that ambidextrous innovation policies may help SMEs to internationalize early and gain a first-mover advantage but that they only provides a temporary advantage. Ambidexterity which incorporates a high level of exploitative product adaptation may offer quick initial foreign market entry but not sustained competitive advantage once other competing firms follow suit. To sustain firm competitive advantage during subsequent rapid internationalization, SMEs entrepreneurs need to focus more on exploratory innovation strategies aimed at developing or enhancing firm innovation capability which is often valuable and more costly to replicate by competitors, seen from a resource-based view.

The above discussion illustrates that each dimension of internationalization speed is different in nature and predicted by a different set of antecedents. Hence, we have empirically validated the multidimensional concept of internationalization speed. There is another method suggested by Hilmersson et al. (2017: 23) to further validate the multidimensional concept, i.e. by "examining the interrelatedness between different temporal dimensions". As shown in Table 2, earliness is positively correlated with speed of deepening ($r = 0.46$) and geographic diversification ($r = 0.39$). To further corroborate this finding, we conducted additional regression analyses of speed of deepening and geographic diversification in which earliness was treated as an independent variable along with other predictors. Earliness was found to be a

significant predictor in both models.[12] This is in line with the born global thesis that early internationalization boosts the speed of further internationalization (Autio et al., 2000; Hilmersson et al., 2017).

Another potential contribution of this study follows from the inclusion of SMEs from both developed and developing economies. Much of the literature on internationalization speed derived from studies of high-tech firms in developed economies (Musteen et al., 2014). The applicability of research findings from developed economy SMEs to developing economy SMEs may be problematic because of institutional and economic differences between the two types of economy (Kiss et al., 2012). Our study shows that developing economy SMEs are more likely to follow a rapid internationalization path into different geographic regions (Models 6-8 in Table 3). A sub-sample analysis indicates that in the sample of developing economy SMEs, speed of geographic diversification was predicted by entrepreneurs' orientation towards differentiation vis-à-vis competitors ($\beta = 0.24$, $p < 0.01$), but not by their innovation strategies. In the sample of developed economy SMEs, speed of geographic diversification was predicted by entrepreneurs' innovation policy on ambidextrous innovation ($\beta = 0.34$, $p < 0.01$) and high R&D intensity ($\beta = 0.23$, $p < 0.05$), whereas differentiation orientation had little or no effect. These contrasting results suggest that despite liability of origin considerations, developing economy SMEs can achieve faster international geographic diversification when their entrepreneurs aim to increase differentiation through obtaining exporter status and leveraging the learning advantages of newness. This finding highlights the necessity of adopting an actor-centered perspective in the study of internationalization speed. This perspective acknowledges the importance of decision-makers' perceptions and purposes,

[12] Earliness was significantly ($\beta = 0.343$, $p < 0.001$) associated with the speed of deepening [Adjusted $R^2$ of the model=0.37, F=8.52 ($p < 0.001$)]. It was significantly ($\beta = 0.334$, $p < 0.001$) associated with the speed of geographic diversification [Adjusted $R^2$ of the model=0.308, F=6.57 ($p < 0.001$)]. Due to limitations of paper length, the results are available upon request from the first author.

and therefore allows for the role of subjectivity. At the same time, it suggests that prevailing contextual conditions may influence the entrepreneur's decisions.

The results of the study offer a useful framework of reference for entrepreneurs as well as their advisors when making plans for international expansion. The multidimensional character of internationalization speed should encourage practitioners to assess different internationalization paths in relation to their circumstances including their innovation strategies, their strategic objectives, and what they have learned from previous experience. For instance, as our findings suggest, a higher speed of deepening is more likely to be pursued by SME entrepreneurs who wish to increase differentiation from competitors through internationalization. Exploratory innovation is important to the achievement of fast international growth. This implies that, for SMEs that plan to increase the share of their international sales rapidly, they have to follow an innovation-based internationalization path by developing the capability for undertaking exploratory innovation.

*5.2. Limitations and future research*

Despite its merits, this study has some limitations worth noting. First, the study sample includes SMEs in specific contexts: from clothing, software, and biotech industries in three developed and three developing economies; therefore caution should be expressed in generalizing our findings to other types of industry or economy. Second, although we cautiously reviewed relevant research before selecting explanatory variables with reference to the actor-centered view that informs them, our results could be idiosyncratic to the study model and another model including well-considered new sets of variables might yield different results. Third, in a similar vein, as illustrated in a recent review of strategic decision-making by Shepherd and Rudd (2014), the context of firms' strategic initiatives incorporates more perspectives than the ones we selected. In addition to our focus on the entrepreneurs' characteristics, these may include,

for example, an environmental perspective which takes into account of both home and host country context. The differences we found between SMEs from developed and developing economies reinforce this point. Moreover, the association of smaller firm size (an aspect of firm context) with earliness of internationalization and faster speed of deepening was unexpected in the light of previous research, and deserves further investigation. Therefore, a fruitful avenue for future studies would be to expand our research model to consider other aspects of an SME's context and, importantly, to investigate whether and how entrepreneurial views about internationalization are formed with contextual factors consciously taken into account. The incorporation of more environmental and cognitive variables in future research could assist a better understanding of strategic choices in internationalization speed.

In addition to these broad limitations, the results of this paper and their suggested interpretation have identified specific fruitful avenues for further research. First, this study follows Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017) in operationalizing internationalization speed as a mean speed. However, some firms may experience a slowdown/acceleration in internationalization since their foundation or a change of speed after the initial internationalization phase. Given the cross-sectional nature of our study, the post-entry dynamics of internationalization speed would be better studied through a longitudinal research design, which enables the recording of critical events reflecting the change of speed as well as the maximum or minimum speed of internationalization at particular points in time. Second, this study operationalized firm international experience as the number of years since the firm first made any sales abroad. Future study could differentiate between the number of years of operating in intra-regional markets and the number of years of operating in inter-regional markets and examine their influence on speed of deepening and speed of geographic diversification. Similarly, entrepreneurs' international experience could also be measured by distinguishing between inter-regional markets and intra-regional markets in future

research. Third, the quality of internationalization achieved as well as the overall financial performance of SMEs may affect speed. Hence, future research could consider the inclusion of SMEs financial performance not just as an outcome but also as a potential conditioning/moderating variable, especially in a longitudinal study. Finally, as already noted, the country context in which SME entrepreneurs started the business matters. Contextual influences on internationalization speed require both more extensive (e.g. wider range of industries & home economies) and intensive (e.g. specific contextual features) examination.

**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*, 236-252.

Acedo, F. J., & Galán, J. L. (2011). Export stimuli revisited: The influence of the characteristics of managerial decision makers on international behaviour. *International Small Business Journal*, *29*, 648-670.

Andersson, S., Evers, N., & Kuivalainen, O. (2014). International new ventures, rapid internationalization across different industry contexts. *European Business Review*, *26*, 390-405.

Anokhin, S., Wincent, J., & Autio, E. (2011). Operationalizing opportunities in entrepreneurship research: use of data envelopment analysis. *Small Business Economics*, *37*, 39-57.

Autio, E., Sapienza, H. J., & Almeida, J. G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, 43, 909-924.

Bell, J., McNaughton, R., Young, S., & Crick, D. (2003). Towards an integrative model of small firm internationalization. *Journal of International Entrepreneurship*, *1*, 339-362.

Bell, J., Crick, D., & Young, S. (2004). Small firm internationalization and business strategy. *International Small Business Journal*, *22*, 23-56.

Bilkey, W.J., & Tesar, G. (1977). The export behavior of smaller-sized Wisconsin manufacturing firms. *Journal of International Business Studies*, *8*, 93-98.

Bonaccorsi, A. (1992). On the relationship between firm size and export intensity. *Journal of International Business Studies*, *23*, 605-635.

Bornemann, T., Schöler, L., & Homburg, C. (2015). In the eye of the beholder? The effect of product appearance on shareholder value. *Journal of Product Innovation Management*, *32*, 704-715.

Boutain, D.M. & Hittu, J. (2006). Orienting multiple interviewers: The use of an interview orientation and standardised interview. *Qualitative Health Research, 16*, 1302-1309.

Bruneel, J., Yli-Renko, H., & Clarysse, B. (2010). Learning from experience and learning from others: how congenital and interorganizational learning substitute for experiential learning in young firm internationalization. *Strategic Entrepreneurship Journal*, *4*, 164-182.

Casson, M. (2003). *The entrepreneur: An economic theory*. (2nd ed.). Cheltenham, UK: Edward Elgar.

Casillas, J.C., & Acedo, F.J. (2013). Speed in the internationalization process of the firm. *International Journal of Management Reviews*, *15*, 15-29.

Casillas, J.C., & Moreno-Menéndez, A.M. (2014). Speed of the internationalization process: The role of diversity and depth in experiential learning. *Journal of International Business Studies*, *45*, 85-101.

Cavusgil, S. T., & Knight, G. (2015). The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization. *Journal of International Business Studies*, *46*, 3-16.

Chandra, Y., Styles, C., & Wilkinson, I.F. (2009). The recognition of first time international entrepreneurial opportunities: Evidence from firms in knowledge-based industries. *International Marketing Review, 26*, 30-61.

Chetty, S., & Campbell-Hunt, C. (2004). A strategic approach to internationalization: a traditional versus a "born-global" approach. *Journal of International Marketing*, *12*, 57-81.

Chetty, S., Johanson, M., & Martín, O.M. (2014). Speed of internationalization: Conceptualization, measurement and validation. *Journal of World Business*, *49*, 633-650.

Child, J. & Hsieh, L.H.Y. (2014). Decision mode, information and network attachment in the internationalization of SMEs: A configurational and contingency analysis. *Journal of World Business*, 49, 598-610.

Child, J., Hsieh, L., Elbanna, S., Karmowska, J., Marinova, S.T, Puthusserry, P., Tsai, T., Narooz, R., & Zhang, Y. (2017). SME international business models: The role of context and experience. *Journal of World Business*, *52*, 664-679.

Coviello, N. (2015). Re-thinking research on born globals. *Journal of International Business Studies*, *46*, 17-26.

Covin, J. G., & Miller, D. (2014). International entrepreneurial orientation: Conceptual considerations, research themes, measurement issues, and future research directions. *Entrepreneurship Theory and Practice*, *38*, 11-44.

Crick, D. (2009). The internationalisation of born global and international new venture SMEs. *International Marketing Review*, *26*, 453-476.

D'Angelo, A., Majocchi, A., Zucchella, A., & Buck, T. (2013). Geographical pathways for SME internationalization: insights from an Italian sample. *International Marketing Review*, *30*, 80-105.

De Clercq, D., Sapienza, H.J., Yavuz, R.I., & Zhou, L. (2012). Learning and knowledge in early internationalization research: Past accomplishments and future directions. *Journal of Business Venturing*, *27*, 143-165.

De Clercq, D., Sapienza, H.J., & Zhou, L. (2014). Entrepreneurial strategic posture and learning effort in international ventures: The moderating roles of operational flexibilities. *International Business Review*, *23*, 981-992.

Di Gregorio, D., Musteen, M., & Thomas, D.E. (2008). International new ventures: The cross-border nexus of individuals and opportunities. *Journal of World Business*, *43*, 186-196.

Dimitratos, P., Voudouris, I., Plakoyiannaki, E., & Nakos, G. (2012). International entrepreneurial culture-Toward a comprehensive opportunity-based operationalization of international entrepreneurship. *International Business Review*, *21*, 708-721.

Dimitratos, P., Buck, T., Fletcher, M., & Li, N. (2016). The motivation of international entrepreneurship: the case of Chinese transnational entrepreneurs. *International Business Review*, *25*, 1103-1113.

Duanmu, J. L. (2012). Firm heterogeneity and location choice of Chinese multinational enterprises (MNEs). *Journal of World Business*, *47*, 64-72.

Elbanna, S., & Fadol, Y. (2016). The role of context in intuitive decision-making. *Journal of Management & Organization*, *22*, 642-661.

Evers, N., & O'Gorman, C. (2011). Improvised internationalization in new ventures: The role of prior knowledge and networks. *Entrepreneurship & Regional Development*, *23*, 549-574.

Fan, T., & Phan, P. (2007). International new ventures: Revisiting the influences behind the "born-global" firm. *Journal of International Business Studies*, *38*, 1113-1131.

Felzensztein, C., Ciravegna, L., Robson, P., & Amorós, J.E. (2015). Networks, entrepreneurial orientation, and internationalization scope: evidence from Chilean small and medium

enterprises. *Journal of Small Business Management*, *53*, 145-160.

Fernhaber, S.A. & Li, D. (2013). International exposure through network relationships: implications for new venture internationalization. *Journal of Business Venturing, 28*, 316-334.

Field, A. (2013). *Discovering Statistics using IBM SPSS statistics*. (4th ed.). London: Sage.

Filipescu, D. A., Prashantham, S., Rialp, A., & Rialp, J. (2013). Technological innovation and exports: Unpacking their reciprocal causality. *Journal of International Marketing*, *21*, 23-38.

Foss, N. J., Klein, P. G., Kor, Y. Y., & Mahoney, J. T. (2008). Entrepreneurship, subjectivism, and the resource-based view: toward a new synthesis. *Strategic Entrepreneurship Journal*, *2*, 73-94.

Freeman, S., & Cavusgil, S. T. (2007). Toward a typology of commitment states among managers of born-global firms: A study of accelerated internationalization. *Journal of International Marketing*, *15*, 1-40.

Gassmann, O., & Keupp, M. M. (2007). The competitive advantage of early and rapidly internationalising SMEs in the biotechnology industry: A knowledge-based view. *Journal of World Business*, *42*, 350-366.

Geppert, M. & Clark, E. (2003) Knowledge and learning in transnational ventures: an actor-centred approach, *Management Decision* , 41, 433-442.

Golovko, E., & Valentini, G. (2011). Exploring the complementarity between innovation and export for SMEs' growth. *Journal of International Business Studies*, *42*, 362-380.

Hagen, B., Zucchella, A., Cerchiello, P., & De Giovanni, N. (2012). International strategy and performance - Clustering strategic types of SMEs. *International Business Review*, *21*, 369-382.

Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2009). *Multivariate data analysis*. London: Pearson Prentice-Hall.

Harris, S. (2000). Reconciling positive and interpretative international management research: A native category approach. *International Business Review*, *9*, 755-770.

He, Z. L., & Wong, P. K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science*, *15*, 481-494.

Hennart, J.F. (2014). The accidental internationalists: a theory of born globals. *Entrepreneurship Theory and Practice*, *38*, 117-135.

Hennart, J. F., Majocchi, A., & Forlani, E. (2017). The myth of the stay-at-home family firm:

How family-managed SMEs can overcome their internationalization limitations. *Journal of International Business Studies*, https://doi.org/10.1057/s41267-017-0091-y

Hilmersson, M., & Johanson, M. (2016). Speed of SME internationalization and performance. *Management International Review*, *56*, 67-94.

Hilmersson, M., Johanson, M., Lundberg, H., & Papaioannou, S. (2017). Time, Temporality, and Internationalization: The Relationship Among Point in Time of, Time to, and Speed of International Expansion. *Journal of International Marketing*, *25*, 22-45.

Hughes, M., Martin, S. L., Morgan, R. E., & Robson, M. J. (2010). Realizing product-market advantage in high-technology international new ventures: The mediating role of ambidextrous innovation. *Journal of International Marketing*, *18*, 1-21.

Hutchinson, K., Quinn, B., & Alexander, N. (2006). The role of management characteristics in the internationalisation of SMEs: Evidence from the UK retail sector. *Journal of Small Business and Enterprise Development*, *13*, 513-534.

Hutchinson, K., Alexander, N., Quinn, B., & Doherty, A.M. (2007). Internationalization motives and facilitating factors: qualitative evidence from smaller specialist retailers. *Journal of International Marketing*, *15*, 96-122.

Johanson, J., & Vahlne, J.E. (1977). The internationalization process of the firm - A model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, *8*, 23-32.

Jones, M. V., & Casulli, L. (2014). International entrepreneurship: exploring the logic and utility of individual experience through comparative reasoning approaches. *Entrepreneurship Theory and Practice*, *38*, 45-69.

Jones, M.V., Coviello, N., & Tang, Y.K. (2011). International entrepreneurship research (1989–2009): a domain ontology and thematic analysis. *Journal of Business Venturing*, *26*, 632-659.

Kalinic, I., & Forza, C. (2012). Rapid internationalization of traditional SMEs: Between gradualist models and born globals. *International Business Review*, *21*, 694-707.

Kiss, A.N., & Danis, W.M. (2008). Country institutional context, social networks, and new venture internationalization speed. *European Management Journal*, *26*, 388-399.

Kiss, A.N., Danis, W.M., & Cavusgil, S.T. (2012). International entrepreneurship research in emerging economies: A critical review and research agenda. *Journal of Business Venturing*, *27*, 266-290.

Kiss, A.N., Williams, D.W., & Houghton, S.M. (2013). Risk bias and the link between

motivation and new venture post-entry international growth. *International Business Review*, *22*, 1068-1078.

Knight, G.A. & Cavusgil, S.T. (1996). The born global firm: A challenge to traditional internationalization theory. *Advances in International Marketing*, *8*, 11 - 27.

Knight, G.A., & Cavusgil, S.T. (2004). Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies*, *35*, 124-141.

Knight, G. A., & Liesch, P. W. (2016). Internationalization: From incremental to born global. *Journal of World Business*, *51*, 93-102.

Kuivalainen, O., Sundqvist, S., Saarenketo, S., & McNaughton, R. (2012). Internationalization patterns of small and medium-sized enterprises. *International Marketing Review*, *29*, 448-465.

Li, L., Qian, G., & Qian, Z. (2015). Speed of internationalization: Mutual effects of individual-and company-level antecedents. *Global Strategy Journal*, *5*, 303-320.

Lisboa, A., Skarmeas, D., & Lages, C. (2011). Entrepreneurial orientation, exploitative and explorative capabilities, and performance outcomes in export markets: A resource-based approach. *Industrial Marketing Management*, *40*, 1274-1284.

Little D. (2014). Actor-centered sociology and the new pragmatism. In J. Zahle, & F. Collin (Eds.), *Rethinking the individualism-holism debate: Essays in the philosophy of social science* (pp. 55-75). Dordrecht: Synthese Library, Springer.

Love, J.H. & Roper, S. (2015). SME innovation, exporting and growth: A review of existing evidence. *International Small Business Journal*, *33*, 28-48.

Love, J. H., Roper, S., & Zhou, Y. (2016). Experience, age and exporting performance in UK SMEs. *International Business Review*, *25*, 806-819.

McDougall, P. P., & Oviatt, B. M. (2000). International entrepreneurship: the intersection of two research paths. *Academy of management Journal*, *43*, 902-906.

Madsen, T. K., & Servais, P. (1997). The internationalization of born globals: an evolutionary process? *International Business Review*, *6*, 561-583.

Mahajan, V., Jain, A. K., & Bergier, M. (1977). Parameter estimation in marketing models in the presence of multicollinearity: An application of ridge regression. *Journal of Marketing Research*, *14*, 586-591.

March, J.G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, *2*, 71-87.

Marinova, S., & Marinov, M. (2017). Inducing the internationalization of family manufacturing

firms from a transition context. *European Business Review*, *29*, 181-204.

Martin, S. L., Javalgi, R. G., & Cavusgil, E. (2017). Marketing capabilities, positional advantage, and performance of born global firms: Contingent effect of ambidextrous innovation. *International Business Review*, *26*, 527-543.

Mesquita, L.F. & Lazzarini, S.G. (2008). Horizontal and vertical relationships in developing economies: Implications for SMEs' access to global markets. *Academy of Management Journal*, *51*, 359-380.

Miles, M. B., Huberman, A.M., & Saldaňa, J. (2014). *Qualitative data analysis: A methods sourcebook*. (4th ed.). Thousand Oaks, CA: Sage.

Miller, T. & del Carmen Triana, M. (2009). Demographic diversity in the boardroom: Mediators of the board diversity-firm performance relationship. *Journal of Management Studies*, *46*, 755-786.

Moen, Ø. (2002). The born globals: a new generation of small European exporters. *International Marketing Review*, *19*, 156-175.

Mort, G.S., Weerawardena, J., & Liesch, P. (2012). Advancing entrepreneurial marketing: Evidence from born global firms. *European Journal of Marketing*, *46*, 542-561.

Mueller, V., Rosenbusch, N., & Bausch, A. (2013). Success patterns of exploratory and exploitative innovation: A meta-analysis of the influence of institutional factors. *Journal of Management*, *39*, 1606-1636.

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*, 197-205.

Musteen, M., Datta, D. K., & Francis, J. (2014). Early internationalization by firms in transition economies into developed markets: The role of international networks. *Global Strategy Journal*, *4*, 221-237.

Muzychenko, O., & Liesch, P. W. (2015). International opportunity identification in the internationalisation of the firm. *Journal of World Business*, *50*, 704-717.

Narooz, R. & Child, J, (2017). Networking responses to different levels of institutional void: A comparison of internationalizing SMEs in Egypt and the UK. *International Business Review, 26*, 683-696.

Onetti, A., Zucchella, A., Jones, M.V., & McDougall-Covin, P.P. (2012). Internationalization, innovation and entrepreneurship: Business models for new technology-based firms. *Journal of Management and Governance*, *16*, 337-368.

Oviatt, B. M., & McDougall, P. P. (1994). Toward a theory of international new ventures. *Journal of International Business Studies*, *25*, 45-64.

Oviatt, B. M., & McDougall, P. P. (2005). Defining international entrepreneurship and modeling the speed of internationalization. *Entrepreneurship Theory and Practice*, *29*, 537-554.

Park, S., LiPuma, J A., & Prange, C. (2015). Venture capitalist and entrepreneur knowledge of new venture internationalization: A review of knowledge components. *International Small Business Journal*, *33*, 901-928.

Patel, P.C., Criaco, G., & Naldi, L. (2016). Geographic Diversification and the Survival of Born-Globals. *Journal of Management*, DOI: 10.1177/0149206316635251

Prashantham, S. (2015). *Born Globals, Networks, and the Large Multinational Enterprise: Insights from Bangalore and Beyond*. Routledge.

Pukall, T. J., & Calabrò, A. (2014). The internationalization of family firms: A critical review and integrative model. *Family Business Review*, *27*, 103-125.

Prashantham, S., & Young, S. (2011). Post-entry speed of international new ventures. *Entrepreneurship Theory and Practice*, *35*, 275-292.

Ramos, E., Acedo, F.J., & Gonzalez, M.R. (2011). Internationalization speed and technological patterns: A panel data study on Spanish SMEs. *Technovation*, *31*, 560-572.

Raymond, L., St-Pierre, J., Uwizeyemungu, S., & Le Dinh, T. (2014). Internationalization capabilities of SMEs: A comparative study of the manufacturing and industrial service sectors. *Journal of International Entrepreneurship*, *12*, 230-253.

Reuber, R. A., & Fischer, E. (1997). The influence of the management team's international experience on the internationalization behaviors of SMES. *Journal of International Business Studies*, *28*, 807-825.

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*, 147-166.

Seifert, R.E., Child, J., & Rodrigues, S.B. (2012). The role of interpretation in the internationalization of smaller Brazilian firms. *Brazilian Administration Review*, *9*, 475-497.

Shepherd, N. G., & Rudd, J. M. (2014). The Influence of context on the strategic decision-making process: A review of the literature. *International Journal of Management Reviews*, *16*, 340–364.

Silverman, D. (2009). *Doing qualitative research*. (3rd ed.). London: Sage.

Sleuwaegen, L., & Onkelinx, J. (2014). International commitment, post-entry growth and survival of international new ventures. *Journal of Business Venturing*, *29*, 106-120.

Smith, W. K., & Tushman, M. L. (2005). Managing strategic contradictions: A top management model for managing innovation streams. *Organization Science*, *16*, 522-536.

Tan, D., & Meyer, K. E. (2010). Business groups' outward FDI: A managerial resources perspective. *Journal of International Management*, *16*, 154-164.

Vanninen, H., Kuivalainen, O., & Ciravegna, L. (2017). Rapid multinationalization: Propositions for studying born micromultinationals. *International Business Review*, *26*, 365-379.

Voss, G.B., & Voss, Z.G. (2013). Strategic ambidexterity in small and medium-sized enterprises: Implementing exploration and exploitation in product and market domains. *Organization Science*, *24*, 1459-1477.

Wally, S., & Baum, J. R. (1994). Personal and structural determinants of the pace of strategic decision-making. *Academy of Management Journal*, *37*, 932-956.

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*, 294-306.

Welch, C., & Piekkari, R. (2006). Crossing language boundaries: Qualitative interviewing in international business. *Management International Review*, *46*, 417-437.

Westhead, P., Wright, M., & Ucbasaran, D. (2001). The internationalization of new and small firms: A resource-based view. *Journal of Business Venturing*, *16*, 333-358.

Yamakawa, Y., Khavul, S., Peng, M.W., & Deeds, D.L. (2013). Venturing from emerging economies. *Strategic Entrepreneurship Journal*, *7*, 181-196.

Zander, I., McDougall, P.P., & Rose, E.L. (2015). Born globals and international business: Evolution of a field of research. *Journal of International Business Studies*, *46*, 27-35.

Zucchella, A., Palamara, G., & Denicolai, S. (2007). The drivers of the early internationalization of the firm. *Journal of World Business*, *42*, 268-280.

**Figure 1 Conceptual framework and hypotheses**

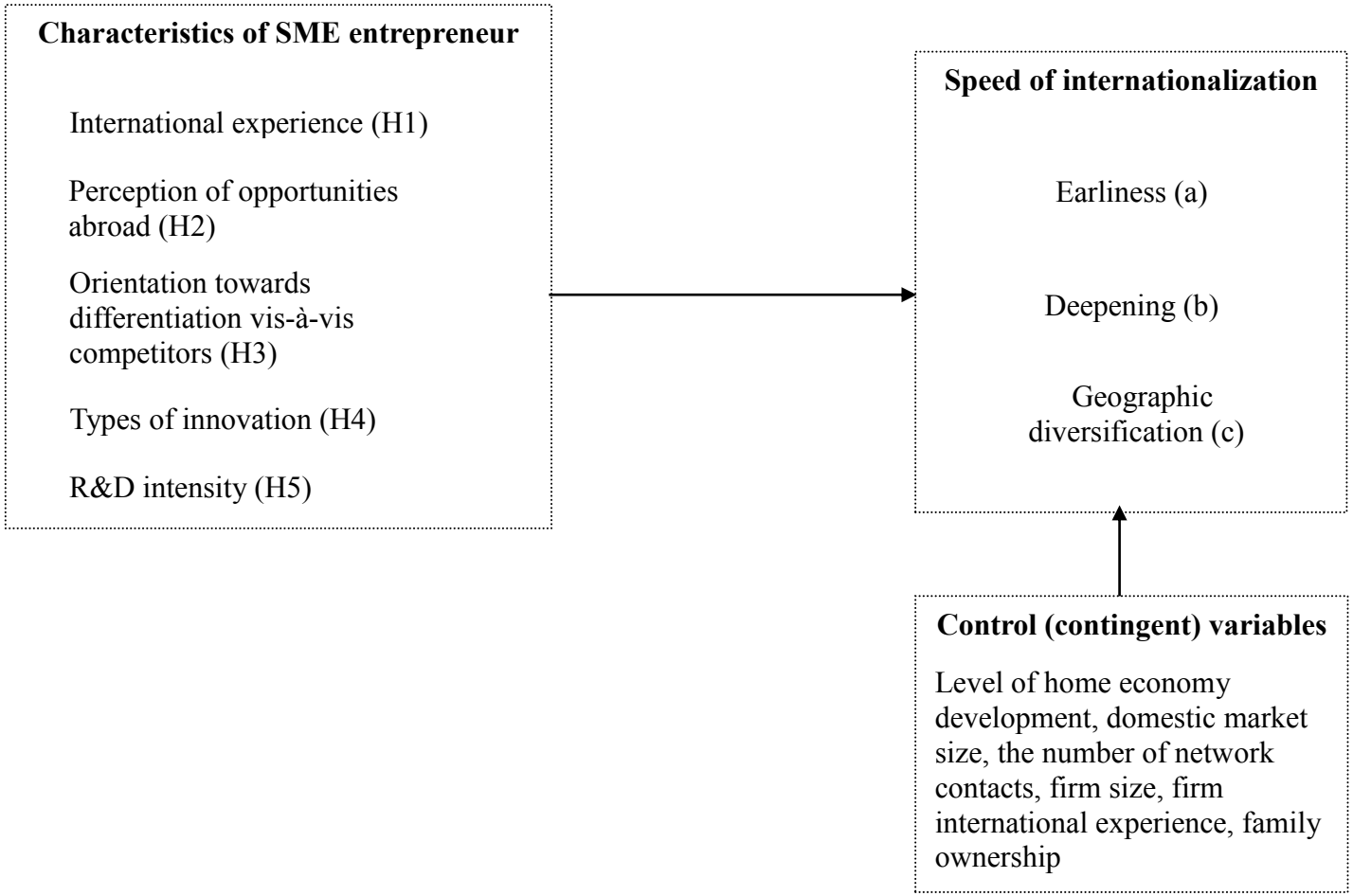

**Table 1 Variables and their measurements**

| Variables | Interview questions | Operational measure(s) |
|---|---|---|
| **Dependent variables** | | |
| Earliness of internationalization | When did your company first make any sales abroad? When was this company founded? | Reverse coding of *the elapsed time between founding of the firm and first international sales* on a scale from 1 to 11 (0 year=11, 1 year=10…10 years and above = 1) |
| Speed of deepening | What is the percentage of your company's sales revenues currently coming from overseas markets? | % of foreign sales / the number of years operating |
| Speed of geographic diversification | Please briefly describe your company's foreign business in terms of regions involved | Total number of geographic regions excluding the home region of SME / the number of years operating |
| **Independent variables** | | |
| International experience of entrepreneur | Did you have experience in doing business internationally prior to joining or founding the firm? | Scored: 0 if No; 1 if Yes |
| Perception of opportunities abroad | What are your reasons for entering foreign markets? | Scored: 0 if not mentioned, 1 if mentioned – see Appendix for derivation. |
| Orientation towards differentiation vis-à-vis competitors | What are your reasons for entering foreign markets? | Scored: 0 if not mentioned, 1 if mentioned – see Appendix for derivation. |
| Types of innovation | Q1. Have you had to develop new products or services as a basis for going abroad? Q2. Have you had to carry out any modification to your existing products or services to supply them abroad? | 1= Exploitation [if Q1 coded 0 (No), Q2 coded 1 (Yes)]; 2= ambidexterity [if Q1 coded 1 (Yes), Q2 coded 1 (Yes)]; 3= exploration [if Q1 coded 1 (Yes), Q2 coded 0 (No)] |
| R&D intensity | How many people do you have working on research and development? | Low = 1, High = 2 |

**Table 1 Variables and their measurements (continued)**

| Variables | Interview questions | Operational measure(s) |
|---|---|---|
| **Control variables** | | |
| Level of home economy development | | Developing economy=1, Developed economy=0 |
| Domestic market size | | Home country GDP (trillion, US$) |
| Network contacts | Which network contacts are key sources of assistance for the firm's internationalization? (For each, scored: 0 if no, 1 if relevant: distributors/agents; customers; suppliers; universities/research institutes; government support agencies in home country; government support agencies abroad; other firms in the region or business/science park; industry/trade associations; board/advisory group; consultants; venture capitalists; banks) | Total number of categories of network contact mentioned |
| Firm size | What is the company's present size in terms of total employment? | Total employment |
| Firm international experience | When did your company first make any sales abroad? | The number of years since the firm first made any sales abroad |
| Family ownership | What is the company's ownership? | Family = 1, Non-family = 0 |

**Table 2 Descriptive statistics and correlations**

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | | | | | | | | | | |
| 2 | .46** | 1 | | | | | | | | | | | | |
| 3 | .39** | .65** | 1 | | | | | | | | | | | |
| 4 | .34** | .29** | .18* | 1 | | | | | | | | | | |
| 5 | .24** | .14 | .04 | -.02 | 1 | | | | | | | | | |
| 6 | .05 | .16* | .18* | .07 | .04 | 1 | | | | | | | | |
| 7 | .26** | .27** | .16 | .33** | .04 | .07 | 1 | | | | | | | |
| 8 | .36** | .28** | .18* | .15* | .00 | .03 | .28** | 1 | | | | | | |
| 9 | .03 | .02 | .21** | -.09 | .09 | .03 | .07 | -.35** | 1 | | | | | |
| 10 | .13 | -.04 | .16* | .08 | -.20** | -.04 | .17* | .04 | .41** | 1 | | | | |
| 11 | .00 | .01 | -.02 | .05 | .09 | -.03 | .13 | .20** | -.21** | .06 | 1 | | | |
| 12 | -.28** | -.31** | -.13 | -.06 | -.02 | -.04 | .02 | -.44** | .39** | .35** | -.03 | 1 | | |
| 13 | -.22** | -.36** | -.35** | -.13 | -.08 | -.08 | -.19* | -.31** | -.10 | -.13 | -.09 | .34** | 1 | |
| 14 | -.32** | -.12 | -.14 | -.18* | -.02 | .00 | .19* | -.34** | .09 | -.10 | -.17* | .25** | .28** | 1 |
| Mean | 7.08 | 6.10 | 0.30 | 0.49 | 0.62 | 0.04 | 1.51 | 1.51 | 0.50 | 2.34 | 4.38 | 3.77 | 12.24 | 0.28 |
| S.D. | 3.88 | 8.04 | 0.48 | 0.50 | 0.49 | 0.19 | 0.68 | 0.50 | 0.50 | 2.88 | 2.53 | 1.24 | 11.33 | 0.45 |

Note: 1, earliness; 2, speed of deepening; 3, speed of geographic diversification; 4, international experience of entrepreneur; 5, perception of opportunities abroad; 6, orientation towards differentiation; 7, types of innovation; 8, R&D intensity; 9, developing economy; 10, domestic market size; 11, network contacts; 12, firm size (log); 13, firm international experience; 14, family ownership
* Correlation is significant at the 0.05 level; ** Correlation is significant at the 0.01 level.

**Table 3 Speed of internationalization**

| ***Dependent variables*** | **Earliness** | | **Speed of deepening** | | |
|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| ***Control variables*** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** |
| Developing economy | .107 (.189) 1.39 | .147 (.059) 1.67 | .089 (.291) 1.47 | .088 (.286) 1.47 | .155 (.065) 1.75 |
| Domestic market size (GDP) | .182 (.023) 1.33 | .127 (.120) 1.81 | -.044 (.593) 1.36 | -.077 (.336) 1.39 | -.110 (.206) 1.91 |
| Number of network contacts | -.019 (.797) 1.11 | -.077 (.235) 1.15 | .008 (.908) 1.11 | .012 (.868) 1.11 | -.003 (.966) 1.15 |
| Firm size (log) | -.344 (.000) 1.38 | -.275 (.000) 1.63 | -.236 (.009) 1.63 | -.181 (.042) 1.70 | -.180 (.040) 1.91 |
| Family ownership | -.217 (.004) 1.15 | -.102 (.131) 1.24 | .020 (.795) 1.20 | .016 (.826) 1.20 | .098 (.166) 1.27 |
| Firm international experience | | | -.285 (.001) 1.34 | -.816 (.000) 7.40 | -.616 (.001) 8.23 |
| Firm international experience² [a] | | | | .556 (.002) 6.63 | .439 (.010) 7.16 |
| ***Entrepreneur characteristics*** | | | | | |
| International experience | | .253 (.000) 1.16 | | | .183 (.008) 1.19 |
| Perception of opportunities abroad | | .258 (.000) 1.14 | | | .087 (.196) 1.14 |
| Orientation towards differentiation | | .055 (.370) 1.03 | | | .145 (.025) 1.04 |
| Exploratory innovation# | | .061 (.362) 1.24 | | | .180 (.013) 1.28 |
| Ambidextrous innovation# | | .158 (.027) 1.38 | | | .112 (.137) 1.42 |
| R&D intensity | | .197 (.011) 1.64 | | | .137 (.094) 1.66 |
| $R^2$ | 0.192 | 0.402 | 0.177 | 0.224 | 0.355 |
| Adjusted $R^2$ | 0.169 | 0.363 | 0.148 | 0.192 | 0.304 |
| F value | 8.148 | 10.10 | 6.099 | 6.956 | 6.913 |
| Probability | .000 | .000 | .000 | .000 | .000 |
| N | 176 | 176 | 176 | 176 | 176 |

# exploitative innovation as the reference category

[a] Firm international experience² is the square of firm international experience.

**Table 3 Speed of internationalization (continued)**

| ***Dependent variables*** | **Speed of geographic diversification** | | |
|---|---|---|---|
| | Model 6 | Model 7 | Model 8 |
| ***Control variables*** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** |
| Developing economy | .211 (.014) 1.46 | .209 (.011) 1.46 | .272 (.002) 1.74 |
| Domestic market size (GDP) | .090 (.270) 1.35 | .053 (.498) 1.37 | -.019 (.836) 1.86 |
| Number of network contacts | -.007 (.926) 1.11 | -.003 (.961) 1.11 | -.005 (.942) 1.15 |
| Firm size (log) | -.154 (.086) 1.63 | -.086 (.328) 1.70 | -.060 (.515) 1.92 |
| Family ownership | -.030 (.697) 1.20 | -.035 (.638) 1.20 | .020 (.790) 1.27 |
| Firm international experience | -.256 (.002) 1.33 | -.908 (.000) 7.44 | -.838 (.000) 8.35 |
| Firm international experience² | | .682 (.000) 6.69 | .649 (.000) 7.28 |
| | | | |
| ***Entrepreneur characteristics*** | | | |
| International experience | | | .079 (.272) 1.20 |
| Perception of opportunities abroad | | | -.010 (.888) 1.14 |
| Orientation towards differentiation | | | .157 (.020) 1.04 |
| Exploratory innovation# | | | .051 (.491) 1.28 |
| Ambidextrous innovation# | | | .112 (.155) 1.42 |
| R&D intensity | | | .126 (.140) 1.66 |
| | | | |
| $R^2$ | 0.169 | 0.239 | 0.299 |
| Adjusted $R^2$ | 0.140 | 0.207 | 0.242 |
| F value | 5.747 | 7.538 | 5.303 |
| Probability | .000 | .000 | .000 |
| N | 175 | 175 | 175 |

# exploitative innovation as the reference category

**Table 4 Test of Robustness**

| ***Dependent variables*** | **Earliness** | | | **Speed of deepening** | | |
|---|---|---|---|---|---|---|
| | Model 9 | Model 10 | Model 11 | Model 12 | Model 13 | Model 14 |
| ***Control variables*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** |
| Developing economy | | .148 (.064) | .151 (.055) | | .172 (.041) | .158 (.060) |
| Domestic market size (GDP) | | .124 (.131) | .126 (.122) | | -.138 (.117) | -.112 (.201) |
| Number of network contacts | | -.066 (.315) | -.087 (.193) | | -.005 (.939) | -.015 (.834) |
| Firm size (log) | | -.266 (.001) | -.286 (.000) | | -.162 (.066) | -.191 (.033) |
| Family ownership | | -.086 (.235) | -.092 (.184) | | .051 (.494) | .109 (.136) |
| Firm international experience | | | | | -.710 (.000) | -.628 (.001) |
| Firm international experience² | | | | | .487 (.005) | .450 (.009) |
| *Software** | | .056 (.512) | | | -.167 (.080) | |
| *Biotech** | | -.023 (.794) | | | -.151 (.103) | |
| *Proactivity* | | | .043 (.544) | | | .047 (.523) |
| | | | | | | |
| ***Entrepreneur characteristics*** | | | | | | |
| International experience | .274 (.000) | .259 (.000) | .248 (.000) | .202 (.005) | .169 (.015) | .177 (.012) |
| Perception of opportunities abroad | .249 (.000) | .250 (.000) | .253 (.000) | .136 (.045) | .103 (.129) | .082 (.229) |
| Orientation towards differentiation | .080 (.215) | .054 (.380) | .056 (.364) | .186 (.007) | .149 (.021) | .145 (.025) |
| Exploratory innovation# | .041 (.565) | .081 (.260) | .057 (.396) | .200 (.008) | .192 (.012) | .175 (.016) |
| Ambidextrous innovation# | .148 (.032) | .159 (.026) | .158 (.027) | .000 (.998) | .122 (.105) | .114 (.132) |
| R&D intensity | .297 (.000) | .194 (.020) | .192 (.015) | .214 (.003) | .189 (.029) | .130 (.115) |
| | | | | | | |
| $R^2$ | 0.313 | 0.406 | 0.404 | 0.231 | 0.369 | 0.357 |
| Adjusted $R^2$ | 0.288 | 0.359 | 0.360 | 0.204 | 0.311 | 0.301 |
| F value | 12.885 | 8.585 | 9.254 | 8.506 | 6.287 | 6.425 |
| Probability | .000 | .000 | .000 | .000 | .000 | .000 |
| N | 176 | 176 | 176 | 176 | 176 | 176 |

*clothing industry as the reference category
# exploitative innovation as the reference category

**Table 4 Test of Robustness (continued)**

| ***Dependent variables*** | **Speed of geographic diversification** | | |
|---|---|---|---|
| | Model 15 | Model 16 | Model 17 |
| ***Control variables*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** |
| Developing economy | | .280 (.002) | .272 (.002) |
| Domestic market size (GDP) | | -.023 (.803) | -.019 (.837) |
| Number of network contacts | | .008 (.912) | -.005 (.946) |
| Firm size (log) | | -.053 (.566) | -.059 (.527) |
| Family ownership | | .026 (.744) | .020 (.797) |
| Firm international experience | | -.821 (.000) | -.838 (.000) |
| Firm international experience² | | .635 (.001) | .649 (.000) |
| *Software** | | .029 (.774) | |
| *Biotech** | | -.062 (.525) | |
| *Proactivity* | | | -.001 (.994) |
| | | | |
| ***Entrepreneur characteristics*** | | | |
| International experience | .123 (.114) | .085 (.246) | .079 (.277) |
| Perception of opportunities abroad | .036 (.620) | -.015 (.831) | -.010 (.890) |
| Orientation towards differentiation | .211 (.004) | .158 (.020) | .157 (.021) |
| Exploratory innovation# | .096 (.233) | .081 (.311) | .051 (.494) |
| Ambidextrous innovation# | .047 (.551) | .114 (.150) | .112 (.156) |
| R&D intensity | .137 (.072) | .135 (.134) | .126 (.144) |
| | | | |
| $R^2$ | 0.110 | 0.304 | 0.299 |
| Adjusted $R^2$ | 0.079 | 0.238 | 0.238 |
| F value | 3.498 | 4.652 | 4.894 |
| Probability | .003 | .000 | .000 |
| N | 175 | 175 | 175 |

*clothing industry as the reference category
# exploitative innovation as the reference category

**Appendix. Illustrations of SME entrepreneurs' reasons for internationalization**

| First-order theme | Second-order theme | Illustrative quotations |
|---|---|---|
| Statements showing what interviewees described as their reason for entering foreign markets | Perception of opportunities abroad | In India, we have lots of firms producing cotton clothing so the opportunities in domestic market are very limited. Foreign companies normally give large orders and their margins are much higher than domestic market.<br><br>The Egyptian market is unfortunately declining. Therefore, we need an export market.<br><br>Huge potential. The size of the market is considerably bigger than the local market. |
| | Orientation towards differentiation vis-à-vis competitors | The domestic market is declining and factories are accepting lower profit rates to survive. Since I am working with tourist markets, I was encouraged [by these clients] and inclined to export which gets me distinguished from others.<br><br>Doing business abroad can broaden our horizons, helping us with our differentiation in the market.<br><br>Our market is the global digital economy itself, it's huge…If we don't do it [international expansion] then somebody somewhere else is going to come and do something similar, or try to. So I think we've got to seize the day, to a certain extent, and go and expand. If we don't compete globally then we're not going to be able to compete at all, so we just have to start the journey. |

# A multidimensional perspective of SME internationalization speed: The influence of entrepreneur and firm innovation characteristics

## Highlights

1. Our findings support a multidimensional perspective on speed of SME internationalization.
2. Each dimension of speed is shaped by the specific orientations of entrepreneurs.
3. Ambidextrous innovation contributes to early internationalization.
4. Exploratory innovation is crucial for the speed of international deepening.

Innovation plays little or no role in the speed of geographic diversification

**Linda Hsieh**

*SOAS University of London, Thornhaugh Street, Russell Square, London WC1H OXG, United Kingdom*

**John Child**

b*University of Birmingham, Birmingham Business School, Edgbaston, Birmingham, B15 2TT, United Kingdom*

**Rose Narooz**

c *University of Glasgow, Adam Smith Business School, West Quadrangle, Glasgow, G12 8QQ, United Kingdom*

**Said Elbanna**

d *Qatar University, College of Business & Economics, Qatar University, P.O.Box 2713, Doha, Qatar*

**Joanna Karmowska**

e *Oxford Brookes University, Oxford Brookes Business School, Headington Campus, Oxford, OX3 0BP, United Kingdom*

**Svetla Marinova**

*Aalborg University, Department of Business and Management, Fibigerstrade 4, Aalborg East 9220, Denmark*

**Pushyarag Puthusserry**g,

g *Kent Business School, University of Kent, Canterbury, Kent, CT2 7FS, United Kingdom*

**Terence Tsai** and **Yunlu Zhang**

*China-Europe International Business School, 699 Hongfeng Road, Pudong, Shanghai 201206, China*

# A multidimensional perspective of SME internationalization speed: The influence of entrepreneurial Characteristics


## ABSTRACT

This paper contributes to a relatively under-explored area of research – a multidimensional perspective on speed of SME internationalization – by applying an actor-centered approach. It examines the influence of entrepreneurs on multiple dimensions of internationalization speed. Findings from a sample of 180 SMEs show that each dimension is predicted by a different set of entrepreneurial antecedents. Earliness of internationalization is associated with entrepreneurs' international experience and their perception of opportunities abroad as well as preference for an innovation strategy characterized by ambidextrous innovation and high R&D intensity. Speed of deepening is related to entrepreneurs' international experience, their orientation towards differentiation vis-à-vis competitors, and an innovation strategy focusing on exploration. Speed of geographic diversification is predicted only by entrepreneurs' orientation towards differentiation vis-à-vis competitors.



**Keywords:** Internationalization, SMEs, Earliness, Speed of deepening, Speed of geographic diversification

## 1. Introduction

International entrepreneurship [IE] studies focusing on the early and rapid internationalization of born globals and international new ventures (e.g. Knight & Cavusgil, 1996; Oviatt & McDougall, 1994; Coviello, 2015) have brought the notion of speed to the forefront of academic debate. They challenged the incremental and slow internationalization process described by the Uppsala/'stages' model (Bilkey & Tesar, 1977; Johanson & Vahlne, 1997). A key aspect of the debate between these two schools of thought concerns the role of actors/decision-makers in the internationalization process (Oviatt & McDougall, 2005). The Uppsala model underspecified the proactive role of entrepreneurs in assuming that firms are risk-averse to internationalization and that the knowledge required for progressive new market entries can be provided by a firm's experience with foreign operations. By contrast, the IE literature has emphasized the role of innovative, proactive and risk-taking behavior of key actors in facilitating early and accelerated international expansion (McDougall & Oviatt, 2000).

Internationalization speed has mainly been conceptualized as the time elapsed between a firm's foundation and its first international sales (Li et al., 2015, Kiss & Danis, 2008; Musteen et al., 2010; Rialp et al., 2005). However, this conceptualization has been criticized for failing to capture the complexity of speed, ignoring internationalization activities that occur after initial market entry, such as the increase over time in the percentage of foreign sales a firm has achieved and the number of new foreign countries it has entered (Prashantham & Young, 2011). The former indicates the "depth" of internationalization and the latter its "breadth". We echo the view of Chetty et al. (2014) that the concept of internationalization speed needs to be

theoretically grounded in the internationalization process model which encourages research to go beyond a limited focus on the speed at which internationalization is first undertaken. A starting point is to adopt a multidimensional perspective by taking into account both the time taken to achieve first foreign market entries and the time span over which firms achieve their current depth and breadth of internationalization (Casillas & Acedo, 2013; Chetty et al., 2014).

Each dimension of internationalization speed is different in nature and might therefore be predicted by a different set of antecedents. The antecedents of early internationalization have been extensively studied (e.g. Musteen et al., 2014). Previous studies have found that firms' technology and knowledge intensity, entrepreneurs' international experience, networks, foreign market knowledge, proactivity, international orientation and perception of opportunities and risks, contribute to an early internationalization process (Acedo & Galán, 2011; Acedo & Jones, 2007; Gassmann & Keupp, 2007; Ramos et al., 2011; Weerawardena et al., 2007). However, the antecedents of the other two dimensions (speed of international depth and breadth) are less known and require additional empirical investigation. Moreover, apart from three empirical studies by Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017), a multidimensional perspective of small and medium-sized enterprise (SME) internationalization speed remains relatively underexplored. The former two studies were restricted to the examination of the relationships between speed and performance, while the latter only studied the antecedents of speed of internationalization breadth. Further research is warranted that adopts a multidimensional perspective and identifies the antecedents of each dimension of internationalization speed.

SMEs tend to be characterized by an individualized leadership (Child & Hsieh, 2014). Individual entrepreneurs who specialize in "taking judgmental decisions about the coordination of scarce resources" (Casson, 2003: 20) are the main actors in SMEs. The significant role played by these individuals means that their profile and actions are highly likely to influence

their decision on the speed at which to expand their business internationally and commit the required resources (Oviatt & McDougall, 2005). However, SME entrepreneurs' behavioral drivers (such as intentions, motivations and perceptions) remain underrepresented in the internationalization decision and process literature (Cavusgil & Knight, 2015; Dimitratos et al., 2016; Muzychenko & Liesch, 2015).

The aim of this paper is to fill the gaps identified above by applying actor-centered view to examine how different dimensions of internationalization speed can be explained through the lens of entrepreneurial actors' international experience, their perception of foreign market opportunities, and their orientation towards differentiation and innovation strategies (R&D intensity and types of innovation). These predictors reflect the "international entrepreneurial orientation (innovativeness, risk taking and proactiveness)" of SME entrepreneurs (see review by Covin & Miller, 2014). The focus of our paper is important not only for its academic interest but also for its managerial implications. Each dimension of internationalization speed represents an internationalization path or strategic alternative. Research into factors shaping these strategic choices therefore promises to be of practical value.

This paper offers three main contributions to the internationalization speed literature. First, it informs existing debate (Casillas & Acedo, 2013) by providing additional empirical evidence for a multidimensional perspective on internationalization speed. Second, it complements Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017) by paying specific attention to the effect of entrepreneurs' characteristics on different dimensions of internationalization speed; this effect was somewhat overlooked in these studies. Third, previous studies of SME internationalization tended to overlook the nuances of exploratory and exploitative innovation (Child et al., 2017) and the pursuit of internationalization through both types of innovation (Martin et al., 2017). To the best of our knowledge, previous studies have not examined the relationship between entrepreneurs' orientation towards different types of

innovation strategy and internationalization speed. Our findings indicate the importance of teasing out different forms of innovation because they help to account for different dimensions of internationalization speed.

This paper proceeds as follows. We begin the next section with a discussion of a multidimensional perspective on internationalization speed, followed by explaining the actor-centered view, identifying postulated predictors of SME internationalization speed, and explaining the methodology employed to test the hypotheses. We then present the findings of our empirical study, concluding with their discussion, limitations and implications for future research.

## 2. Literature and development of hypotheses

### *2.1. A multidimensional perspective on internationalization speed*

Although there has been an ongoing debate about the concept of internationalization speed reflecting the different terminologies (e.g. pace, rhythm, precocity, early, rapid, accelerated, time to internationalization) introduced into previous research (see Chetty et al., 2014), there seems to be a consensus emerging that speed is a multidimensional construct. The seminal work of Oviatt and McDougall (2005) as well as Casillas and Acedo (2013) has been influential in providing a conceptualization of the multiple dimensions of internationalization speed. The former differentiated three dimensions of internationalization speed: 1) time between the discovery of an opportunity and the first foreign market entry, 2) how rapidly foreign market entries proceed and how rapidly psychically distant markets are entered, and 3) how quickly international commitments are made and how fast the percentage of international sales increases. The latter identified three underlying dimensions of speed, namely speed of change in a firm's international commercial intensity, speed of change in its breath of international markets, and speed of change in its resource commitment abroad.

Casillas and Acedo (2013: 16) defined speed of the internationalization process as "a relationship between time and a company's international events". The time period considered in previous studies of born globals and international new ventures was normally the time elapsed to achieve first international expansion (see Coviello, 2015). By contrast, the time period considered in mainstream international business research was the whole history of a firm to the date of study, which emphasizes the experiential knowledge a firm accumulates from international operations since its foundation – i.e. its learning. The international diversity captured by the dispersion of a firm's business across different geographic markets and the depth of international activities are important sources of learning in the course of internationalization (Casillas & Moreno-Menéndez, 2014). Chetty et al. (2014: 634) borrowed the concept from physics which defines speed as "an object's change of position or its movement" and it "includes the time it takes to travel a specific distance". They defined speed as "a relationship between the internationalization distance covered and the time passed to reach this" and they conceptualize the international distance covered as "the firm's current state of internationalization" (Chetty et al. 2014: 640). Hence, the time elapsed to achieve the firm's current state of internationalization can be considered equivalent to the age of the firm. Hilmersson and Johanson (2016) and Hilmersson et al. (2017) define speed as the time it takes from inception to reach a certain degree of internationalization.

We build on the above understanding, defining internationalization speed as the specific time period over which a firm has achieved a certain state of internationalization since inception. The states of a firm's internationalization include achieving the first foreign market entry, the current depth (the firm's ratio of foreign to total sales) and breadth of internationalization (geographic diversification). Hence the three dimensions of internationalization speed to be examined in this study are: 1) how early a firm makes first sales abroad since its founding (earliness), 2) the speed of deepening, and 3) the speed of geographic diversity. The specific

time period considered for the first dimension of speed is the time elapsed from the founding of firm to the first foreign market entry. In line with Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017), the specific time period considered for the last two dimensions of speed is the time elapsed from the founding of firm to the date of data collection. These measures capture the average speed of a firm that covers or travels a certain internationalization distance within a specific time period, i.e. the rate of international deepening per year and the rate of geographic diversification per year. The advantage of adopting an average measure is that it offers a representative indicator of a firm's overall internationalization evolution, bearing in mind that particular points in time (such as when maximum depth and breadth were attained) could be unrepresentative and also present problems for making comparisons between firms.

*2.2. Actor-centered view*

An actor-centered view emphasizes that outcomes derive from the characteristics and action models of the individuals who comprise a social setting (Little, 2014). It is based on the theoretical premise that human agency is crucial to explaining the behavior of organizations, in this case SMEs. It therefore questions the assumption that speed of SME internationalization can be adequately explained by reference only to a firm's external contingencies and its structural characteristics (Geppert & Clark, 2003). This view acknowledges the importance of decision-makers' perceptions and purposes, and therefore allows for the role of subjectivity. Subjectivist theory posits that "individuals hold different preferences, knowledge, and expectations, and more specifically, the pre-supposition that the contents of the human mind, and hence decision making, are not rigidly determined by external events" (Foss et al., 2008: 74). Subjectivism makes room for individuals' autonomy in decision-making and choices (Kor et al., 2007).

In the context of SME internationalization, the actors of concern are usually the individual entrepreneurs or group of decision-makers who discover or enact opportunities abroad and they are also described as "internationally entrepreneurial actors" (Oviatt & McDougall, 2005). IE literature has ascribed the variation in firms' internationalization decision to actor/entrepreneur-specific factors (Jones et al., 2011). Oviatt and McDougall (2005) highlighted entrepreneurial actors' personal characteristics and thinking as prime factors determining the speed at which international activities are to be performed. Moreover, Freeman and Cavusgil (2007) indicated that entrepreneurial actors' propensity for proactiveness, innovativeness, and risk-taking often reflects their attitude to accelerated internationalization. They found that *strategist entrepreneurs* are highly innovative, proactive, and risk taking. They focus on leading technology, want to build their business in lead markets, and show a high level of commitment to accelerated internationalization from inception by "leaping directly into strategic alliances or joint manufacturing rather than following a gradual process of outward linkages, such as exporting" (2007: 29).

An actor-centered view on internationalization decisions draws attention to the characteristics of SME entrepreneurs, more specifically, the formative relevance of their prior international experience and entrepreneurial orientation. International experience "creates the motivation and ambition to become born global, among other thing because it changes the perception of distance to other countries" (Madsen & Servais, 1997: 574). This perspective may also shed light on the speed of internationalization through highlighting that some entrepreneurs are able to identify opportunities in foreign markets that others overlook. Moreover, the strategic orientation of SMEs is often manifested by their leading actors' entrepreneurial orientation, such as proactive motivations for internationalization, an innovation orientation, and a risk-taking attitude towards international opportunities (Hagen et al., 2012). Accordingly, we will focus on the reasons that entrepreneurs as key SME actors have

for internationalization (perception of foreign market opportunities, orientation towards differentiation), as well as their orientation towards innovation strategies (types of innovation and R&D intensity). Entrepreneurs adopting the strategy of offering innovative and high value-added products that have the potential to serve a worldwide clientele, are more likely to see their firm internationalize early and launch products in several foreign markets (Cavusgil & Knight, 2015). Drawing on insights from the actor-centered view, we develop a conceptual framework (Figure 1) with constituent hypotheses concerning the impact of entrepreneurs on different dimensions of internationalization speed.

[Figure 1 about here]

*2.3. Hypotheses development*

*Prior international experience.* Prior international experience of entrepreneurs or management teams in SMEs has been found to contribute to early internationalization as it can be drawn upon to compensate for the lack of organizational knowledge of foreign markets (e.g. Bruneel et al. 2010; Love et al., 2016; Zucchella et al., 2007). Bruneel et al. (2010), for example, conclude that when firms have less experiential learning in foreign markets, the effect of entrepreneurs' prior international experience on internationalization matters more. SME entrepreneurs with past international experience have a greater propensity to delay less in obtaining foreign sales after start-up because experience mediates their perception of distance to foreign countries (Madsen & Servais, 1997; Reuber & Fischer, 1997). In addition, they are more likely to have a greater awareness of potential and emerging international opportunities and tend to be more proactive to pursue those opportunities, thus leading them to internationalize early and achieve a larger scale and scope of internationalization (Chandra et al., 2009; De Clercq et al., 2012; Kuivalainen et al., 2012).

Moreover, experience as a foundation for entrepreneurs' intuition (Elbanna & Fadol, 2016) enhances their ability to learn and access the relevance of past events efficiently (Wally & Baum, 1994). It can also simplify complex situations. When decision makers use intuition, they may make judgments from either heuristics or analogical reasoning that draws upon experientially established cognitive structures and compares between previously experienced international market situations and those newly encountered (Jones & Casulli, 2014). The international experience of entrepreneurs might be translated into heuristics or decision-rules that support rapid internationalization (ibid). Analogical reasoning can increase an entrepreneur's reasoning capability, speed, and expertise so that it may speed up decisions on internationalization and influence successive internationalization market entries (ibid). Hence:

> **Hypothesis 1:** The international experience of SME entrepreneurs is positively associated with a) earliness of internationalization, b) speed of deepening, c) speed of geographic diversification.

*Perception of opportunities abroad.* The perception that foreign markets offer favorable opportunities is among the subjective characteristics of SME entrepreneurs that are influential in shaping internationalization decisions (Hutchinson et al., 2006). Compared to the entrepreneurs of incrementally internationalizing SMEs, those of international new ventures or born-globals tend to be more positive about overcoming barriers to international expansion, perceive international markets as providing opportunities, and as being less risky (Chetty & Campbell-Hunt, 2004; Dimitratos et al., 2012). Additionally, they view internationalization as an opportunity for value creation as well as taking advantage of market inefficiencies (Anokhin et al., 2011; Di Gregorio et al., 2008; Kalinic & Forza, 2012). A high self-efficacy towards internationalization among entrepreneurs "results in a reduced risk perception and increased expectation of more positive outcomes in a given situation" (Muzychenko & Liesch, 2015:

707). Thus, it can be argued that if entrepreneurs exhibit a positive view towards internationalization, see it more as an opportunity than a threat, and perceive foreign market opportunities to be more attractive than domestic ones, they are more likely to commit resources to exploit international opportunities early (Acedo & Galán, 2011; Moen, 2002) and to increase the international presence of their company (Kiss et al., 2013). This leads to:

> **Hypothesis 2:** SME entrepreneurs' perception of opportunities abroad is positively associated with a) earliness of internationalization, b) speed of deepening, c) speed of geographic diversification.

*Orientation towards differentiation vis-à-vis competitors*. The strategic posture of individual entrepreneurs is critical to internationalization decision-making (De Clercq et al., 2014). Entrepreneurs' recognition of the possibility of achieving differentiation vis-à-vis competitors through having a market presence abroad often contributes to the decision to internationalize early. Additionally, their desire to build a positive image to defend competitive advantages has been suggested as a key and proactive motive for firm internationalization (Hutchinson et al., 20007). International new ventures typically exploit their innovative technology early in lead markets in order to show that they are capable of serving key customers (Crick, 2009). Similarly, Vanninen et al. (2017) found that a global entrepreneurial mindset willing to seize multiple sources of opportunities abroad and achieving this through visibility, reputation, and being close to clients and partners in strategic markets, could explain the use of high-commitment market entry strategies from inception in the rapid multinationalization process of Finnish born micro-multinationals.

Moreover, new ventures from developing countries such as China and India are more likely to internationalize into developed economies (as opposed to other emerging economies) because these advanced economies can provide potential reputational benefits and learning

opportunities (Yamakawa et al., 2013). Seifert et al. (2012) found that some Brazilian SME entrepreneurs considered selling abroad as a way to differentiate their firm in the domestic market through obtaining international acceptance and the status of being an exporter, and consequently decided to internationalize early and into more distant markets, even if the decision did not seem economically justifiable in the short term. Their finding supports Oviatt and McDougall's (1994) claim that significant competitive advantages can be gained by new ventures using their resources and selling their outputs to operate immediately in multiple countries. In this sense, we expect that SME entrepreneurs who prefer differentiation-based competitive advantages will internationalize early and pursue paths to rapid international growth as a way to sustain positional advantages. Also that, given the possibility of learning, SMEs will increase the scale, scope, and commitment of their international presence in order to stay ahead of their competitors. This suggests:

> **Hypothesis 3:** SME entrepreneurs' orientation towards differentiation vis-à-vis competitors is positively associated with a) earliness of internationalization, b) speed of deepening, c) speed of geographic diversification.

*Types of innovation.* A positive relationship between innovation and exporting among SMEs has been widely reported (Golovko & Valentini, 2011; Love & Roper, 2015). Innovation is a key component of a product differentiation strategy which enables firms to rely on their technological expertise to compete in international markets and in turn to contribute to international sales growth (Lisboa et al., 2011). In a study of Spanish SMEs, Ramos et al. (2011) found that entrepreneurs from technology-intensive firms who consider product innovation as a fundamental component of competitive strategy internationalize their firms significantly earlier than main competitors.

Innovation can take various forms even if we confine the scope of the term to the generation of new or improved products and services. It can be radical, involving what March (1991) termed “exploration”, namely the generation of new knowledge to produce new products or services. It can also be incremental involving the “exploitation” of already available knowledge for purposes of adapting or improving existing products or services.

Exploratory innovation is a strategy option characterized by the highest level of innovation orientation. It provides a means for new ventures to achieve international market entry and growth. But, it is riskier, more expensive, and has less certain outcomes and longer time horizons (Prashantham, 2015). In the pursuit of more sustainable growth and positional advantages, the entrepreneurs of resource-deficient SMEs may have to complement exploratory innovation with exploitative innovation which permits faster time to market and facilitates the achievement of short-term positive performance. In knowledge-based SMEs, such as biotech firms, entrepreneurs often adopt the policy of complementing discovery work with more routine analytical ‘contract research’, exploiting existing knowledge, in order to provide cash flow to sustain their business during the long product development cycle (Child et al., 2017). Hughes et al. (2010) and Martin et al. (2017) found that ambidextrous innovation (the possession of both types of innovation capability) contributes to the performance of SMEs that internationalize within two years of their founding. Firms that shun exploration could be vulnerable to stagnation threatening their future viability, whereas firms that avoid exploitation could suffer from the loss of short-term efficiency (Smith & Tushman, 2005). In view of the above, we argue that the adoption of an ambidextrous innovation policy enables SMEs to internationalize early and to lower the risk of failure.

On the one hand, an exploitative innovation policy allows SMEs to leverage existing knowledge to quickly enter foreign countries similar to their home country, and on the other hand, an exploratory innovation policy helps generate potential positional advantages and avoid

technological obsolescence. Post-entry internationalization therefore often combines exploration and exploitation activities across product and market functions. However, smaller firms frequently lack the requisite human and financial resources to create the structure to manage increasing organizational complexity and to accrue value from ambidextrous innovation (Voss & Voss, 2013). To avoid spreading their limited resources too thinly, SMEs adopting the strategy of pursuing product ambidextrous innovation are therefore less likely to engage in a high speed of subsequent internationalization.

By contrast, focusing on exploratory innovation may delay SMEs' internationalization. However, if SMEs can successfully accomplish exploratory innovation, they can acquire first-mover advantages that competitors often find it difficult to imitate (Mueller et al., 2013). We suggest that if an exploratory innovation policy is successful in the early stage of internationalization, it allows SME entrepreneurs to maximize international growth opportunities offered by product innovation. As a result, entrepreneurs are more likely to increase the proportion of international sales as rapidly as possible to realize scope economies through a concentrated regional market strategy. A broad regional market strategy increases the likelihood of born-global failures due to the increasing cost of managing sales in very diverse geographic regions (Patel et al., 2016). Hence, we pose the following hypotheses:

**Hypothesis 4.1:** SMEs focusing on a strategy of exploratory innovation will tend to a) internationalize later, and exhibit b) higher speed of deepening, c) lower speed of geographic diversification, in comparison to those focusing on an exploitative innovation strategy.

**Hypothesis 4.2:** SMEs pursuing an ambidextrous innovation strategy will tend to a) internationalize earlier, and exhibit b) lower speed of deepening, c) lower speed of geographic diversification, in comparison to those focusing on an exploitative innovation strategy.

*R&D intensity.* R&D intensity has been identified as an important determinant of SME export intensity and diversification (Raymond et al., 2014). Entrepreneurs' decision to invest in specialist R&D personnel enhances the capability of their SMEs to develop firm-specific advantages in knowledge-based resources which could be leveraged across different foreign markets (Oviatt & McDougall, 1994). Faced with increasing competition and/or opportunities presented by global demand, some entrepreneurs may seek to derive firm competitive advantages by commercializing new products or services in multiple country markets, thus increasing the expected returns to their R&D (D'Angelo et al., 2013). Also small new ventures with high R&D intensity tend to internationalize within three years of founding (Li et al., 2015). The need to amortize the high R&D costs typical of high-tech firms often pushes new ventures to expand more quickly into international markets (Andersson et al., 2014).

Moreover, some authors (e.g. Filipescu et al., 2013) found that R&D intensity and international breadth and depth have a reciprocal relationship. They suggest that entrepreneurs of exporting firms can take advantage of their participation in international markets by acquiring and absorbing new knowledge inputs not available in domestic markets. Therefore, entrepreneurs can enhance the existing knowledge base of their firm by increasing its exposure to a richer source of knowledge through subsequent international diversification, which in turn is helpful to maintain the firm's competitiveness and international market position. Therefore, we hypothesize the following:

**Hypothesis 5**: R&D intensity is positively associated with a) earliness of internationalization, b) speed of deepening, c) speed of geographic diversification.

## 3. Methodology

### *3.1. Sampling, data collection and coding*

Data were collected for this study between 2012 and 2014 from the clothing, software and biotechnology industries in six economies, namely, the Arab Middle East, China, Denmark, India, Poland and the UK.[1] Firms were selected for study according to pre-determined criteria in order to maintain consistency within a research design that incorporated systematic contextual contrasts. The first criterion was that selected firms in Denmark, Poland and the UK should employ fewer than 250 employees and have turnover of not more than EUR 50m or balance sheet total of not more than EUR 43m in order to ensure that they fall in the SME category according to the EU definition.[2] For comparative purposes, the same employment size criterion was applied when selecting firms from the other three economies. The second criterion concerned the choice of the three industries, which was informed by Bell et al.'s (2003; 2004) typology distinguishing between traditional, knowledge-intensive and knowledge-based SMEs. Clothing is an example of traditional industry in which the advanced knowledge is not intrinsic to market offerings. Software and biotech firms, which respectively fall into the knowledge-intensive and knowledge-based industry categories, rely more on advanced knowledge. Software firms usually are not inherently knowledge-based and they tend to use advanced knowledge to develop new offerings. In contrast, biotech firms can usually be considered as 'first-movers' in niche markets and new knowledge is intrinsic to their market offerings. A third sampling criterion involved the inclusion of two contrasting categories of economy (developed economy and developing economy) in order to combine avoiding the risk of drawing conclusions from a single national context with the ability to control this context when required. A fourth criterion was that the selected firms must be active in outward international business and have generated sales revenues from abroad. The sample was a

[1] The Arab Middle East in this sample is actually a region consisting of three countries, Egypt, Jordan and the UAE. However, it is treated as one unit.

[2] The definition was obtained from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003H0361 Accessed October 26, 2017.

non-probability purposeful one. It did not aim to represent a given population, but rather to provide a set of firms that met the criteria described above. An equal number of SMEs located in developed and developing economies were selected. The choice of countries within these two categories reflected the availability of local researchers/authors known to have the necessary language and subject-area competences and the understanding of the research context. The author(s) responsible for data collection in each country contacted potential SMEs that met the predetermined criteria in terms of firm size, the type of industry, the level of home economy development, and engagement in international business. Data from 30 SMEs in each economy were collected and evenly distributed between the three industries. In total 334 candidate firms were approached. Those firms agreeing to participate were added to the sample until the target sample of 180 SMEs was met (giving a response rate of 54 %).

Semi-structured interviews incorporating a mixture of closed-ended and open questions were designed to collect data from the principal decision-maker on internationalization in each SME. Using the on-site visits approach helped to better understand the sampled firms' activities. The interviews lasting between one and two hours were digitally recorded and later transcribed. The interviewers were normally full members of the project team and all had competences in the field of international business along with extensive local area knowledge. For interviews conducted outside the UK, interviewers were bilingual in the local language and in English (cf. Welch & Piekkari, 2006).

In order to ensure consistency of measures and reliability within the multi-country and multi-case research process, the interview schedule was standardized to serve as a replication guide for the researchers and hence enhance data collection stability (Miles et al., 2014; Silverman, 2009). Various procedures were followed to control for the use of multiple interviewers and achieve consistency and a common understanding of all questions in general and of the meanings to be attached to qualitative responses in particular. These include: (1)

strict control of the interview process (Harris, 2000) and training of the interviewers concerning issues such as the identification of follow-up questions, use of probes, establishment of rapport, and avoidance of leading questions (Boutain & Hitti, 2006); (2) the involvement of the second author in several interviews conducted in four countries other than his own; (3) the participation of all project members in four three-day workshops, which were further supported by several face-to-face meetings between sub-groups within the project, and (4) 32 regular Skype conference calls among project members, all of which were at least one hour long and minuted. This was further reinforced by the exchange of regular emails each week.

Transcripts of initial interviews were analyzed at one of the workshops to ensure common understanding and interpretation. Each project member undertook the cross coding of six cases from one of the other countries and subsequently the initial coding scheme was refined. Overall inter-coder agreement in the cross-coding was 79.7%. After six months of discussions among project members, consensus was reached in all instances of initially different interpretation. All transcripts were then coded using the refined coding scheme. To further reduce validity concerns and to check for coding anomalies, frequency runs and tabulations were performed after coding and entering the data into an SPSS data file.

### *3.2. Measures*

Table 1 provides details of the measurement of the variables that this paper used. It indicates the relevant questions asked in the interviews and how replies were operationalized. Some items are factual in nature and are recorded either directly (e.g. R&D intensity) or in terms of their presence or absence (e.g. exploratory innovation). Others, notably SME entrepreneur's reasons for internationalization, are perceptual in nature and are coded from an analysis of interviewee statements.

The measure of *internationalization speed* is multidimensional, consisting of *earliness*, the

speed of *deepening*, and the speed of *geographic diversification*. Earliness was measured by the time taken to make first international sales since founding (e.g. Musteen et al. 2010; Ramos et al. 2011). In line with previous empirical work on internationalization speed (Chetty et al., 2014; Hilmersson & Johanson, 2016; Hilmersson et al., 2017), the other two dimensions were operationalized in terms of mean speed. The denominator, time, was measured by the number of years operating, i.e. "the time elapsed from firm inception to the date of data collection" (Hilmersson & Johanson, 2016: 83). The speed of deepening was measured by dividing the ratio of international to total sales by time (Hilmersson & Johanson, 2016). The speed of geographic diversification was measured by dividing the geographic diversity by time. Geographic diversity was calculated as the total number of geographic regions that SMEs operate outside their home region [Each was scored 1 if mentioned, otherwise 0: Europe, North America, South & Central America, MENA (Middle East & North Africa), Oceania, East & South East Asia, South Asia (India, Pakistan, Bangladesh), Sub-Saharan Africa]. For example, if a Danish or Polish SME exports only within the Europe, its geographic diversity would be coded as 0. The maximum score for geographic diversity would be 7. The *international experience* of entrepreneurs was operationalized as whether they had previous experience in international business prior to joining or founding the firm (Reuber & Fischer, 1997). To assess entrepreneurial orientation, we asked SME entrepreneurs about their reasons for internationalization and their orientation towards innovation strategis. Two second-order themes which captured some aspects of entrepreneurial orientation arose in open-ended interview responses: *perception of opportunities abroad*, and *orientation towards differentiation vis-à-vis competitors*. The Appendix indicates how they were derived from interviewees' statements. Entrepreneurs' orientation towards innovation strategies were assessed in terms of their decision on the *types of innovation* activity and *R&D intensity*. Previous research (e.g. Child et al., 2017; Miller & del Carmen Triana, 2009) has supported the

use of a firm's R&D intensity measured by R&D staff as a share of the total employment as an appropriate proxy for its *innovation*. R&D intensity was then dichotomized into high and low intensity using a median split.[3] However, because R&D intensity does not readily capture innovation in lower-technology industries such as clothing, we also assessed innovation activities with reference to exploration, exploitation, and ambidexterity (He & Wong, 2003; March, 1991).

Moreover, a number of contextual (level of home economy development, domestic market size) and firm factors (network contacts, firm size, firm international experience, family ownership) known potentially to influence internationalization speed are included as control variables in this study, since its aim is to focus on actor-related rather than contextual and contingent influences on internationalization speed. There are divergent arguments over whether and how level of home economy development will predict internationalization speed. One argument stems from the argument of 'learning by exporting' (see review by Love & Roper, 2015). Insofar as SMEs from developing (rather than developed) economies are endeavoring to catch up with their competitors from other economies in terms of innovation and product competitiveness, they may be encouraged not only to begin exporting early but also to enlarge the depth and spread of their foreign markets as rapidly as possible. Counter to this argument is the fact that SMEs located in developing economies tend to suffer from institutional voids (Mesquita & Lazzarini, 2008), focus on less technological intensive business with lower

[3] The variable of R&D intensity measured by R&D staff as a share of the total employment has a substantially positive skewness (skewness value is 5.49) and the data contains 16 zero scores. As suggested by Tabachnick and Fidell (2007), the variable should be transformed into LG10 (X + K). K is a constant. When a small constant value of 1 is added to the scores, the problem of skewness still exists (skewness value is 2.84). Additionally, the transformed data may not characterize the original data and it can lead to the incorrect interpretation of the hypothesized result. Hence, a binary variable was created using a median split. SMEs considered high in R&D intensity (based on the sample median) are those with greater than 15.61 percent of employees engaged in R&D activities. SMEs with 15.61 percent of employment or lower in R&D are coded as low in R&D intensity.

product development costs (Kiss et al., 2012), and rely more heavily on social ties to facilitate their internationalization than do SMEs in a developed country (Narooz & Child, 2017), which in turn, would restrict the range of foreign markets in which they can compete. In our sample, Denmark, Poland and the UK are classified as developed economies, while the Arab Middle East, China and India are classified as developing economies.[4] Domestic market size may also be important in explaining early internationalization, the depth and breadth of international sales, as indicated by Hennart (2014) and Fan and Phan (2007). While early internationalizing firms tend to come from economies with a smaller domestic market, they have also been found in economies with a large domestic market (Knight & Liesch, 2016). Domestic market size was measured by the country GDP data from the World Bank (Duanmu, 2012).[5]

Among firm-level controls, the number of network contacts was measured by the total number of categories of network contact considered by interviewees as key sources of assistance for their firm's internationalization. Some studies (e.g. Fernhaber & Li, 2013; Park et al., 2015) suggest that the greater number of network contacts can facilitate and support internationalization activities of SMEs, especially for those entrepreneurs with limited or no previous international experience. However, this effect was not found by Felzensztein et al. (2015). Firm size has also been shown in previous studies (e.g. Bonaccorsi, 1992; Chetty et al., 2014) to influence internationalization decisions and the speed of the internationalization process suggesting the premise that larger firms tend to have a greater capacity to adopt more

[4] While Poland, along with other Central and Eastern European economies, was considered to be emerging in the 1990s (Meyer & Peng, 2016), it is today classified as a developed economy by the United Nations – see http://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.pdf, accessed 26 January 2016.

[5] Average GDP data for the period 2010-2014 was used in the regression analyses and reported in Table 3. We also conducted an additional regression analysis by substituting for the average GDP data with GDP data from 2011. The results are consistent with those reported in Table 3. Hence, it can be concluded that using either average GDP data for the years just prior to and during the study period rather than the GDP data from the year before the data collection started does not affect the results of regression and hypothesis testing.

resource-consuming strategies. A firm's international experience was measured by the number of years during which a firm had been engaged in sales to foreign markets (Child et al., 2017). The accumulation of international market knowledge helps mitigate the level of perceived risk associated with further international expansion and could thus encourage entrepreneurs to increase the range/scope of foreign market entries and to increase international revenues through more effective sales efforts (Johanson & Vahlne, 1997; Prashantham & Young, 2011). Accordingly, they could potentially affect the speed of deepening and geographic diversity. Research on the speed of internationalization of family-owned firms is controversial. Some authors argue that they internationalize later and slower (see review by Pukall & Calabrò, 2014), while others suggest that family firms are fast internationalizers (Hennart et al., 2017; Marinova & Marinov, 2017). In the sample, 51 (28.3%) of the firms were family owned. [6]

[Table 1 about here]

## 4. Findings

### *4.1. Test of hypotheses*

Table 2 presents the means, standard deviations and correlation coefficients of the variables. Based on Field (2013), the Phi coefficient was used to estimate the strength of association between two binary variables and Cramer's V was used to assess the correlation between types of innovation and binary variables. Biserial correlation was used to estimate the strength of associations between binary and continuous variables (ibid). None of the correlations between independent variables exceed 0.44.

[6] An additional 21 firms (11.7% of the sample) were wholly-owned owned by an individual and not classified as family-owned. The other categories of ownership were group of non-family shareholders; dispersed shareholding; venture capital/private equity; university; cooperative/collective, government authority.

[Table 2 about here]

Considering the hypotheses of this study, we conducted a series of ordinary least squares regressions and the results are shown in Table 3.[7] Model 2 shows that the earliness of internationalization was positively related to SME entrepreneurs' international experience ($\beta$ = 0.253, $p < 0.01$), their perception of opportunities abroad ($\beta$ = 0.258, $p < 0.01$) and their orientation towards a high R&D intensity ($\beta$ = 0.197, $p < 0.05$) and ambidextrous innovation strategy ($\beta$ = 0.158, $p < 0.05$). Their orientation towards differentiation vis-à-vis competitors and exploratory innovation strategy were not significant as evidenced in Model 2. These findings provide full support for H1a, H2a, H4.2a, and H5a, but not for H3a and H4.1a.

Model 5 shows that the speed of deepening was positively associated with SME entrepreneurs' international experience ($\beta$ = 0.183, $p < 0.01$), and their orientation towards differentiation ($\beta = 0.145, p < 0.05$) and an exploratory innovation strategy ($\beta = 0.180, p < 0.01$). R&D intensity is marginally significant ($\beta$ = 0.137, $p < 0.10$). The perception of opportunities abroad and ambidextrous innovation were not significant. These results demonstrate full support for H1b, H3b, H4.1b, and some support for H5b, but not for H2b and H4.2b.

As shown in Model 8, the speed of diversifying into different geographic regions was positively related to SME entrepreneurs' orientation towards differentiation vis-à-vis competitors ($\beta = 0.157, p < 0.05$), thus confirming H3c only. H1c, H2c, H4.1c, H4.2c, and H5c are rejected as the variables of entrepreneurs' international experience, perception of opportunities abroad, the strategies of exploration, ambidextrous innovation and high R&D intensity were not significant.

[7] Due to non-availability of data in one firm on prior international experience of decision-makers, in one firm on the speed of geographic diversification, in one firm on the number of network contacts, and in two firms on the number of R&D staff, the N for the analyses of earliness and speed of deepening in Table 3 is 176. The N for the analysis of speed of geographic diversification is 175.

As to control variables, Models 6-8 show that SMEs from developing economies are more likely to engage in higher speed of geographic diversification. Domestic market size and family ownership were significant in Model 1 where only control variables were included. Models 1-5 show that firm size was significantly negatively related to the earliness and speed of deepening, contrary to the findings of some previous studies. Models 3-8 show that the international experience of firm was significant. Models 4 and 7 examine the non-linear effect between firm international experience and speed of deepening as well as speed of geographic diversification.[8] The positive coefficients of the squared terms shown in both models suggest that the relationship is curved and U-shaped. This implies that speed of deepening and speed of geographic diversity decrease when SMEs' accumulation of international market knowledge is low. SMEs have to unlearn established routines, such as those on intra-regional markets, in order to overcome inter-regional liability of foreignness and to increase speed of geographic diversification. Overall, the number of network contacts does not appear as important, as expected and predicted by previous studies.

[Table 3 about here]

*4.1. Tests of robustness*

We took several actions to increase confidence in our results. First, we tested whether or not the results remain robust after the inclusion of additional controls. For instance, based on previous studies which suggest that early internationalization among SMEs is a phenomenon typical of high-tech industries oriented towards innovation (Jones et al., 2011; Knight & Cavusgil, 2004; Onetti et al., 2012; Zander et al., 2015), one might hypothesize that industry differences across

[8] The scatterplot of firm international experience versus speed of deepening indicates a non-linear relationship. The scatterplot of firm international experience versus speed of geographic diversity also shows a non-linear relationship. To take into account of these non-linear relationships, the square of firm international experience was included in the regression analyses.

the clothing, software and biotech sector could product different results in internationalization speed.[9] But the regression results of Models 10, 13, 16 in Table 4 provide strong evidence against this alternative explanation, indicating that our main results are not affected by unobserved industry heterogeneity. In fact, early internationalization has also been found in more traditional and low-tech sectors, according to some previous research (e.g. Mort et al., 2012). Another commonly studied driver of early internationalization is entrepreneurs' proactivity (Cavusgil & Knight, 2015).[10] After the inclusion of proactivity as a control variable, the main results shown in Models 11, 14, 17 were consistent with those findings reported in Table 3.

Second, we also tested the robustness of our main results by running additional regression analyses without including the control variables, in order to reduce the concerns about the possibility that the results may be due to the correlations between independent and control variables. The results in Models 9, 12, 15 suggest that our findings were not affected by collinearity. Third, we checked for possible multicollinearity. All the variance inflation factor values reported in Table 3 were below the suggested threshold of 10 (Hair et al., 2009). Additionally, we conducted ridge regressions which have been suggested useful for diagnosing and dealing with potential multicollinearity issues as the method minimizes prediction error and enables assessment of the stability of parameter estimates (Bornemann et al., 2015; Mahajan et al., 1977). The results suggest that multicollinearity was not a concern in this paper.[11] We can

[9] Two dummies (software, biotech) were created. Clothing industry was treated as the reference group.

[10] Proactivity is a binary variable constructed from replies to a question on how the SME's internationalization started. The firm was classified as proactive if its entrepreneur had taken the initiative to find international customers as opposed to reacting to a serendipitous approach.

[11] We used NCSS statistical software to carry out ridge regressions to include all the independent and control variables in each model. The Eigenvalues of correlations results indicate all condition numbers are less than 10, thus multicollinearity is not a problem. And the generated standardized coefficients and R-Squared in ridge

conclude that the correlations among the independent variables did not affect our results.

[Table 4 about here]

## 5. Conclusions

### *5.1. Discussion*

This paper, adopting an actor-centered approach, set out to examine the influence of entrepreneurs' characteristics (international experience, perception of foreign market opportunities, orientation towards differentiation and innovation strategies) on the multiple dimensions of SME internationalization speed. It offers several contributions to the literature. First, it informs existing debate (Casillas & Acedo, 2013) by providing additional empirical evidence for the relevance of a multidimensional perspective on internationalization speed. More specifically, it extends the studies of Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017) by applying an actor-centered view and paying specific attention to the role of entrepreneurs which was somewhat overlooked in these studies. Our findings suggest that earliness, speed of deepening, and speed of geographic diversity can be viewed as three different strategic alternatives, although they are not mutually exclusive. As Table 3 shows each dimension of internationalization speed is predicted by a different set of factors, indicating how each choice is shaped by entrepreneurs' subjective perception, thinking and preference. Additionally, given that previous studies (e.g. Acedo & Jones, 2007) have generally focused on the impact of entrepreneurs on just one dimension of internationalization speed – earliness – this study advances knowledge by demonstrating how entrepreneurs might influence other dimensions of speed including deepening and geographic diversification. For example, SME entrepreneurs' perception of opportunities abroad predicted early

regressions were similar to those reported in the ordinary least squares regressions shown in Table 3. Due to paper length limitations, the results are available upon request.

internationalization but not speed of deepening and speed of geographic diversification. The latter two dimensions were predicted by entrepreneurs' orientation towards differentiation to bolster firm competitiveness. This contrasting finding suggests that although entrepreneurs may initiate internationalization because they perceive foreign market opportunities to be more attractive than domestic ones, some may not be motivated to exploit further internationalization opportunities because they do not see these as an opportunity to differentiate themselves from their competitors. It appears that the decision of increasing either speed of deepening or speed of geographic diversification is a deliberate strategic choice of SME entrepreneurs, especially if they think doing so will enable them to obtain reputational benefits and learning opportunities which could potentially be useful for defending their firm competitive advantages.

Moreover, our findings confirm the argument that entrepreneurs' international experience induces firm growth through internationalization and shapes the direction of that growth (Tan & Meyer, 2010; Zucchella et al., 2007). The experiential knowledge of entrepreneurs compensates for the lack of organizational experience in internationalization at the time of founding, prepares them for capitalizing on the learning advantages of newness and helps to alleviate the liabilities of foreignness and newness. Although the capacities of SME decision makers at the time of founding are likely to set a limit to the extent of internationalization, they may enhance those capabilities by focusing experiential learning over time from a specific market or markets within the same region. In doing so, they enhance early internationalizing firms' chance of survival because intra-regional liability of foreignness may be lower than inter-regional liability of foreignness (Sleuwaegen & Onkelinx, 2014), which enables entrepreneurs to increase the proportion of international revenues through more effective sales efforts in extant markets.

Our findings of entrepreneurs' international experience and firm international experience provide preliminary evidence in support of Prashantham and Young's conceptual argument

(2011) that specific market knowledge in the form of experiential knowledge needs to be transformed into objective and neutral market knowledge, so that market knowledge can be easily transferred and applied, which in turn facilitates the speed of post-entry. More specifically, our results imply that although entrepreneurs' experiential knowledge is beneficial for increasing speed of deepening, they need to develop organizational mechanisms to facilitate the acquisition of market knowledge and to transform individualized experiential knowledge into an explicit and objective form. The procedure or routine established would provide guidance on how to do things in similar situations. On the other hand, our results also imply that the international experience of firms in a specific market region or home region may inhibit speed of geographic diversification as the procedure or routine that has been developed over time for operating in SMEs' home region or a narrow set of markets has become embedded and hence inflexible. To increase the speed of geographic diversification, firms need to unlearn or adjust their established country-specific or intra-regional routines or procedures for operating in other regional markets.

Furthermore, previous studies (e.g. Hughes et al., 2010; Martin et al., 2017) only address the consequences of different types of innovation for SME performance. They offer limited explanation of how the nuances of exploratory and exploitative innovation will predict internationalization speed. The present study contributes to this gap in knowledge by showing that it is important to distinguish entrepreneurial orientations towards different types of innovation strategy because they have varying effects on the different dimensions of internationalization speed. Exploratory innovation strategies help explain speed of deepening (increasing the proportion of international sales to total sales) but not speed of geographic diversification. There are several possible explanations for this finding which deserve to be investigated further. One is that exploration heavily backed by R&D enables an SME to capture a large share of a few targeted big foreign markets (such as the USA), and that this is sufficient

to satisfy the firm's performance aspirations. Another is that in view of the limited resources typical of SMEs, their engagement in expensive exploratory innovation may well be highly focused and specific to the needs of certain foreign markets only. Ambidextrous innovation strategies only contribute to early internationalization but not to other dimensions of internationalization speed. High R&D intensity is important to early internationalization and moderately important to speed of deepening. These results suggest that ambidextrous innovation policies may help SMEs to internationalize early and gain a first-mover advantage but that they only provides a temporary advantage. Ambidexterity which incorporates a high level of exploitative product adaptation may offer quick initial foreign market entry but not sustained competitive advantage once other competing firms follow suit. To sustain firm competitive advantage during subsequent rapid internationalization, SMEs entrepreneurs need to focus more on exploratory innovation strategies aimed at developing or enhancing firm innovation capability which is often valuable and more costly to replicate by competitors, seen from a resource-based view.

The above discussion illustrates that each dimension of internationalization speed is different in nature and predicted by a different set of antecedents. Hence, we have empirically validated the multidimensional concept of internationalization speed. There is another method suggested by Hilmersson et al. (2017: 23) to further validate the multidimensional concept, i.e. by "examining the interrelatedness between different temporal dimensions". As shown in Table 2, earliness is positively correlated with speed of deepening ($r = 0.46$) and geographic diversification ($r = 0.39$). To further corroborate this finding, we conducted additional regression analyses of speed of deepening and geographic diversification in which earliness was treated as an independent variable along with other predictors. Earliness was found to be a

significant predictor in both models.[12] This is in line with the born global thesis that early internationalization boosts the speed of further internationalization (Autio et al., 2000; Hilmersson et al., 2017).

Another potential contribution of this study follows from the inclusion of SMEs from both developed and developing economies. Much of the literature on internationalization speed derived from studies of high-tech firms in developed economies (Musteen et al., 2014). The applicability of research findings from developed economy SMEs to developing economy SMEs may be problematic because of institutional and economic differences between the two types of economy (Kiss et al., 2012). Our study shows that developing economy SMEs are more likely to follow a rapid internationalization path into different geographic regions (Models 6-8 in Table 3). A sub-sample analysis indicates that in the sample of developing economy SMEs, speed of geographic diversification was predicted by entrepreneurs' orientation towards differentiation vis-à-vis competitors ($\beta = 0.24$, $p < 0.01$), but not by their innovation strategies. In the sample of developed economy SMEs, speed of geographic diversification was predicted by entrepreneurs' innovation policy on ambidextrous innovation ($\beta = 0.34$, $p < 0.01$) and high R&D intensity ($\beta = 0.23$, $p < 0.05$), whereas differentiation orientation had little or no effect. These contrasting results suggest that despite liability of origin considerations, developing economy SMEs can achieve faster international geographic diversification when their entrepreneurs aim to increase differentiation through obtaining exporter status and leveraging the learning advantages of newness. This finding highlights the necessity of adopting an actor-centered perspective in the study of internationalization speed. This perspective acknowledges the importance of decision-makers' perceptions and purposes,

[12] Earliness was significantly ($\beta = 0.343$, $p < 0.001$) associated with the speed of deepening [Adjusted $R^2$ of the model=0.37, F=8.52 ($p < 0.001$)]. It was significantly ($\beta = 0.334$, $p < 0.001$) associated with the speed of geographic diversification [Adjusted $R^2$ of the model=0.308, F=6.57 ($p < 0.001$)]. Due to limitations of paper length, the results are available upon request from the first author.

and therefore allows for the role of subjectivity. At the same time, it suggests that prevailing contextual conditions may influence the entrepreneur's decisions.

The results of the study offer a useful framework of reference for entrepreneurs as well as their advisors when making plans for international expansion. The multidimensional character of internationalization speed should encourage practitioners to assess different internationalization paths in relation to their circumstances including their innovation strategies, their strategic objectives, and what they have learned from previous experience. For instance, as our findings suggest, a higher speed of deepening is more likely to be pursued by SME entrepreneurs who wish to increase differentiation from competitors through internationalization. Exploratory innovation is important to the achievement of fast international growth. This implies that, for SMEs that plan to increase the share of their international sales rapidly, they have to follow an innovation-based internationalization path by developing the capability for undertaking exploratory innovation.

*5.2. Limitations and future research*

Despite its merits, this study has some limitations worth noting. First, the study sample includes SMEs in specific contexts: from clothing, software, and biotech industries in three developed and three developing economies; therefore caution should be expressed in generalizing our findings to other types of industry or economy. Second, although we cautiously reviewed relevant research before selecting explanatory variables with reference to the actor-centered view that informs them, our results could be idiosyncratic to the study model and another model including well-considered new sets of variables might yield different results. Third, in a similar vein, as illustrated in a recent review of strategic decision-making by Shepherd and Rudd (2014), the context of firms' strategic initiatives incorporates more perspectives than the ones we selected. In addition to our focus on the entrepreneurs' characteristics, these may include,

for example, an environmental perspective which takes into account of both home and host country context. The differences we found between SMEs from developed and developing economies reinforce this point. Moreover, the association of smaller firm size (an aspect of firm context) with earliness of internationalization and faster speed of deepening was unexpected in the light of previous research, and deserves further investigation. Therefore, a fruitful avenue for future studies would be to expand our research model to consider other aspects of an SME's context and, importantly, to investigate whether and how entrepreneurial views about internationalization are formed with contextual factors consciously taken into account. The incorporation of more environmental and cognitive variables in future research could assist a better understanding of strategic choices in internationalization speed.

In addition to these broad limitations, the results of this paper and their suggested interpretation have identified specific fruitful avenues for further research. First, this study follows Chetty et al. (2014), Hilmersson and Johanson (2016), and Hilmersson et al. (2017) in operationalizing internationalization speed as a mean speed. However, some firms may experience a slowdown/acceleration in internationalization since their foundation or a change of speed after the initial internationalization phase. Given the cross-sectional nature of our study, the post-entry dynamics of internationalization speed would be better studied through a longitudinal research design, which enables the recording of critical events reflecting the change of speed as well as the maximum or minimum speed of internationalization at particular points in time. Second, this study operationalized firm international experience as the number of years since the firm first made any sales abroad. Future study could differentiate between the number of years of operating in intra-regional markets and the number of years of operating in inter-regional markets and examine their influence on speed of deepening and speed of geographic diversification. Similarly, entrepreneurs' international experience could also be measured by distinguishing between inter-regional markets and intra-regional markets in future

research. Third, the quality of internationalization achieved as well as the overall financial performance of SMEs may affect speed. Hence, future research could consider the inclusion of SMEs financial performance not just as an outcome but also as a potential conditioning/moderating variable, especially in a longitudinal study. Finally, as already noted, the country context in which SME entrepreneurs started the business matters. Contextual influences on internationalization speed require both more extensive (e.g. wider range of industries & home economies) and intensive (e.g. specific contextual features) examination.

**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*, 236-252.

Acedo, F. J., & Galán, J. L. (2011). Export stimuli revisited: The influence of the characteristics of managerial decision makers on international behaviour. *International Small Business Journal*, *29*, 648-670.

Andersson, S., Evers, N., & Kuivalainen, O. (2014). International new ventures, rapid internationalization across different industry contexts. *European Business Review*, *26*, 390-405.

Anokhin, S., Wincent, J., & Autio, E. (2011). Operationalizing opportunities in entrepreneurship research: use of data envelopment analysis. *Small Business Economics*, *37*, 39-57.

Autio, E., Sapienza, H. J., & Almeida, J. G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, 43, 909-924.

Bell, J., McNaughton, R., Young, S., & Crick, D. (2003). Towards an integrative model of small firm internationalization. *Journal of International Entrepreneurship*, *1*, 339-362.

Bell, J., Crick, D., & Young, S. (2004). Small firm internationalization and business strategy. *International Small Business Journal*, *22*, 23-56.

Bilkey, W.J., & Tesar, G. (1977). The export behavior of smaller-sized Wisconsin manufacturing firms. *Journal of International Business Studies*, *8*, 93-98.

Bonaccorsi, A. (1992). On the relationship between firm size and export intensity. *Journal of International Business Studies*, *23*, 605-635.

Bornemann, T., Schöler, L., & Homburg, C. (2015). In the eye of the beholder? The effect of product appearance on shareholder value. *Journal of Product Innovation Management*, *32*, 704-715.

Boutain, D.M. & Hittu, J. (2006). Orienting multiple interviewers: The use of an interview orientation and standardised interview. *Qualitative Health Research, 16*, 1302-1309.

Bruneel, J., Yli-Renko, H., & Clarysse, B. (2010). Learning from experience and learning from others: how congenital and interorganizational learning substitute for experiential learning in young firm internationalization. *Strategic Entrepreneurship Journal*, *4*, 164-182.

Casson, M. (2003). *The entrepreneur: An economic theory*. (2nd ed.). Cheltenham, UK: Edward Elgar.

Casillas, J.C., & Acedo, F.J. (2013). Speed in the internationalization process of the firm. *International Journal of Management Reviews*, *15*, 15-29.

Casillas, J.C., & Moreno-Menéndez, A.M. (2014). Speed of the internationalization process: The role of diversity and depth in experiential learning. *Journal of International Business Studies*, *45*, 85-101.

Cavusgil, S. T., & Knight, G. (2015). The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization. *Journal of International Business Studies*, *46*, 3-16.

Chandra, Y., Styles, C., & Wilkinson, I.F. (2009). The recognition of first time international entrepreneurial opportunities: Evidence from firms in knowledge-based industries. *International Marketing Review, 26*, 30-61.

Chetty, S., & Campbell-Hunt, C. (2004). A strategic approach to internationalization: a traditional versus a "born-global" approach. *Journal of International Marketing*, *12*, 57-81.

Chetty, S., Johanson, M., & Martín, O.M. (2014). Speed of internationalization: Conceptualization, measurement and validation. *Journal of World Business*, *49*, 633-650.

Child, J. & Hsieh, L.H.Y. (2014). Decision mode, information and network attachment in the internationalization of SMEs: A configurational and contingency analysis. *Journal of World Business*, 49, 598-610.

Child, J., Hsieh, L., Elbanna, S., Karmowska, J., Marinova, S.T, Puthusserry, P., Tsai, T., Narooz, R., & Zhang, Y. (2017). SME international business models: The role of context and experience. *Journal of World Business*, *52*, 664-679.

Coviello, N. (2015). Re-thinking research on born globals. *Journal of International Business Studies*, *46*, 17-26.

Covin, J. G., & Miller, D. (2014). International entrepreneurial orientation: Conceptual considerations, research themes, measurement issues, and future research directions. *Entrepreneurship Theory and Practice*, *38*, 11-44.

Crick, D. (2009). The internationalisation of born global and international new venture SMEs. *International Marketing Review*, *26*, 453-476.

D'Angelo, A., Majocchi, A., Zucchella, A., & Buck, T. (2013). Geographical pathways for SME internationalization: insights from an Italian sample. *International Marketing Review*, *30*, 80-105.

De Clercq, D., Sapienza, H.J., Yavuz, R.I., & Zhou, L. (2012). Learning and knowledge in early internationalization research: Past accomplishments and future directions. *Journal of Business Venturing*, *27*, 143-165.

De Clercq, D., Sapienza, H.J., & Zhou, L. (2014). Entrepreneurial strategic posture and learning effort in international ventures: The moderating roles of operational flexibilities. *International Business Review*, *23*, 981-992.

Di Gregorio, D., Musteen, M., & Thomas, D.E. (2008). International new ventures: The cross-border nexus of individuals and opportunities. *Journal of World Business*, *43*, 186-196.

Dimitratos, P., Voudouris, I., Plakoyiannaki, E., & Nakos, G. (2012). International entrepreneurial culture-Toward a comprehensive opportunity-based operationalization of international entrepreneurship. *International Business Review*, *21*, 708-721.

Dimitratos, P., Buck, T., Fletcher, M., & Li, N. (2016). The motivation of international entrepreneurship: the case of Chinese transnational entrepreneurs. *International Business Review*, *25*, 1103-1113.

Duanmu, J. L. (2012). Firm heterogeneity and location choice of Chinese multinational enterprises (MNEs). *Journal of World Business*, *47*, 64-72.

Elbanna, S., & Fadol, Y. (2016). The role of context in intuitive decision-making. *Journal of Management & Organization*, *22*, 642-661.

Evers, N., & O'Gorman, C. (2011). Improvised internationalization in new ventures: The role of prior knowledge and networks. *Entrepreneurship & Regional Development*, *23*, 549-574.

Fan, T., & Phan, P. (2007). International new ventures: Revisiting the influences behind the "born-global" firm. *Journal of International Business Studies*, *38*, 1113-1131.

Felzensztein, C., Ciravegna, L., Robson, P., & Amorós, J.E. (2015). Networks, entrepreneurial orientation, and internationalization scope: evidence from Chilean small and medium

enterprises. *Journal of Small Business Management*, *53*, 145-160.

Fernhaber, S.A. & Li, D. (2013). International exposure through network relationships: implications for new venture internationalization. *Journal of Business Venturing, 28*, 316-334.

Field, A. (2013). *Discovering Statistics using IBM SPSS statistics*. (4th ed.). London: Sage.

Filipescu, D. A., Prashantham, S., Rialp, A., & Rialp, J. (2013). Technological innovation and exports: Unpacking their reciprocal causality. *Journal of International Marketing*, *21*, 23-38.

Foss, N. J., Klein, P. G., Kor, Y. Y., & Mahoney, J. T. (2008). Entrepreneurship, subjectivism, and the resource-based view: toward a new synthesis. *Strategic Entrepreneurship Journal*, *2*, 73-94.

Freeman, S., & Cavusgil, S. T. (2007). Toward a typology of commitment states among managers of born-global firms: A study of accelerated internationalization. *Journal of International Marketing*, *15*, 1-40.

Gassmann, O., & Keupp, M. M. (2007). The competitive advantage of early and rapidly internationalising SMEs in the biotechnology industry: A knowledge-based view. *Journal of World Business*, *42*, 350-366.

Geppert, M. & Clark, E. (2003) Knowledge and learning in transnational ventures: an actor-centred approach, *Management Decision* , 41, 433-442.

Golovko, E., & Valentini, G. (2011). Exploring the complementarity between innovation and export for SMEs' growth. *Journal of International Business Studies*, *42*, 362-380.

Hagen, B., Zucchella, A., Cerchiello, P., & De Giovanni, N. (2012). International strategy and performance - Clustering strategic types of SMEs. *International Business Review*, *21*, 369-382.

Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2009). *Multivariate data analysis*. London: Pearson Prentice-Hall.

Harris, S. (2000). Reconciling positive and interpretative international management research: A native category approach. *International Business Review*, *9*, 755-770.

He, Z. L., & Wong, P. K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science*, *15*, 481-494.

Hennart, J.F. (2014). The accidental internationalists: a theory of born globals. *Entrepreneurship Theory and Practice*, *38*, 117-135.

Hennart, J. F., Majocchi, A., & Forlani, E. (2017). The myth of the stay-at-home family firm:

How family-managed SMEs can overcome their internationalization limitations. *Journal of International Business Studies*, https://doi.org/10.1057/s41267-017-0091-y

Hilmersson, M., & Johanson, M. (2016). Speed of SME internationalization and performance. *Management International Review*, *56*, 67-94.

Hilmersson, M., Johanson, M., Lundberg, H., & Papaioannou, S. (2017). Time, Temporality, and Internationalization: The Relationship Among Point in Time of, Time to, and Speed of International Expansion. *Journal of International Marketing*, *25*, 22-45.

Hughes, M., Martin, S. L., Morgan, R. E., & Robson, M. J. (2010). Realizing product-market advantage in high-technology international new ventures: The mediating role of ambidextrous innovation. *Journal of International Marketing*, *18*, 1-21.

Hutchinson, K., Quinn, B., & Alexander, N. (2006). The role of management characteristics in the internationalisation of SMEs: Evidence from the UK retail sector. *Journal of Small Business and Enterprise Development*, *13*, 513-534.

Hutchinson, K., Alexander, N., Quinn, B., & Doherty, A.M. (2007). Internationalization motives and facilitating factors: qualitative evidence from smaller specialist retailers. *Journal of International Marketing*, *15*, 96-122.

Johanson, J., & Vahlne, J.E. (1977). The internationalization process of the firm - A model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, *8*, 23-32.

Jones, M. V., & Casulli, L. (2014). International entrepreneurship: exploring the logic and utility of individual experience through comparative reasoning approaches. *Entrepreneurship Theory and Practice*, *38*, 45-69.

Jones, M.V., Coviello, N., & Tang, Y.K. (2011). International entrepreneurship research (1989–2009): a domain ontology and thematic analysis. *Journal of Business Venturing*, *26*, 632-659.

Kalinic, I., & Forza, C. (2012). Rapid internationalization of traditional SMEs: Between gradualist models and born globals. *International Business Review*, *21*, 694-707.

Kiss, A.N., & Danis, W.M. (2008). Country institutional context, social networks, and new venture internationalization speed. *European Management Journal*, *26*, 388-399.

Kiss, A.N., Danis, W.M., & Cavusgil, S.T. (2012). International entrepreneurship research in emerging economies: A critical review and research agenda. *Journal of Business Venturing*, *27*, 266-290.

Kiss, A.N., Williams, D.W., & Houghton, S.M. (2013). Risk bias and the link between

motivation and new venture post-entry international growth. *International Business Review*, *22*, 1068-1078.

Knight, G.A. & Cavusgil, S.T. (1996). The born global firm: A challenge to traditional internationalization theory. *Advances in International Marketing*, *8*, 11 - 27.

Knight, G.A., & Cavusgil, S.T. (2004). Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies*, *35*, 124-141.

Knight, G. A., & Liesch, P. W. (2016). Internationalization: From incremental to born global. *Journal of World Business*, *51*, 93-102.

Kuivalainen, O., Sundqvist, S., Saarenketo, S., & McNaughton, R. (2012). Internationalization patterns of small and medium-sized enterprises. *International Marketing Review*, *29*, 448-465.

Li, L., Qian, G., & Qian, Z. (2015). Speed of internationalization: Mutual effects of individual-and company-level antecedents. *Global Strategy Journal*, *5*, 303-320.

Lisboa, A., Skarmeas, D., & Lages, C. (2011). Entrepreneurial orientation, exploitative and explorative capabilities, and performance outcomes in export markets: A resource-based approach. *Industrial Marketing Management*, *40*, 1274-1284.

Little D. (2014). Actor-centered sociology and the new pragmatism. In J. Zahle, & F. Collin (Eds.), *Rethinking the individualism-holism debate: Essays in the philosophy of social science* (pp. 55-75). Dordrecht: Synthese Library, Springer.

Love, J.H. & Roper, S. (2015). SME innovation, exporting and growth: A review of existing evidence. *International Small Business Journal*, *33*, 28-48.

Love, J. H., Roper, S., & Zhou, Y. (2016). Experience, age and exporting performance in UK SMEs. *International Business Review*, *25*, 806-819.

McDougall, P. P., & Oviatt, B. M. (2000). International entrepreneurship: the intersection of two research paths. *Academy of management Journal*, *43*, 902-906.

Madsen, T. K., & Servais, P. (1997). The internationalization of born globals: an evolutionary process? *International Business Review*, *6*, 561-583.

Mahajan, V., Jain, A. K., & Bergier, M. (1977). Parameter estimation in marketing models in the presence of multicollinearity: An application of ridge regression. *Journal of Marketing Research*, *14*, 586-591.

March, J.G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, *2*, 71-87.

Marinova, S., & Marinov, M. (2017). Inducing the internationalization of family manufacturing

firms from a transition context. *European Business Review*, *29*, 181-204.

Martin, S. L., Javalgi, R. G., & Cavusgil, E. (2017). Marketing capabilities, positional advantage, and performance of born global firms: Contingent effect of ambidextrous innovation. *International Business Review*, *26*, 527-543.

Mesquita, L.F. & Lazzarini, S.G. (2008). Horizontal and vertical relationships in developing economies: Implications for SMEs' access to global markets. *Academy of Management Journal*, *51*, 359-380.

Miles, M. B., Huberman, A.M., & Saldaňa, J. (2014). *Qualitative data analysis: A methods sourcebook*. (4th ed.). Thousand Oaks, CA: Sage.

Miller, T. & del Carmen Triana, M. (2009). Demographic diversity in the boardroom: Mediators of the board diversity-firm performance relationship. *Journal of Management Studies*, *46*, 755-786.

Moen, Ø. (2002). The born globals: a new generation of small European exporters. *International Marketing Review*, *19*, 156-175.

Mort, G.S., Weerawardena, J., & Liesch, P. (2012). Advancing entrepreneurial marketing: Evidence from born global firms. *European Journal of Marketing*, *46*, 542-561.

Mueller, V., Rosenbusch, N., & Bausch, A. (2013). Success patterns of exploratory and exploitative innovation: A meta-analysis of the influence of institutional factors. *Journal of Management*, *39*, 1606-1636.

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*, 197-205.

Musteen, M., Datta, D. K., & Francis, J. (2014). Early internationalization by firms in transition economies into developed markets: The role of international networks. *Global Strategy Journal*, *4*, 221-237.

Muzychenko, O., & Liesch, P. W. (2015). International opportunity identification in the internationalisation of the firm. *Journal of World Business*, *50*, 704-717.

Narooz, R. & Child, J, (2017). Networking responses to different levels of institutional void: A comparison of internationalizing SMEs in Egypt and the UK. *International Business Review, 26*, 683-696.

Onetti, A., Zucchella, A., Jones, M.V., & McDougall-Covin, P.P. (2012). Internationalization, innovation and entrepreneurship: Business models for new technology-based firms. *Journal of Management and Governance*, *16*, 337-368.

Oviatt, B. M., & McDougall, P. P. (1994). Toward a theory of international new ventures. *Journal of International Business Studies*, *25*, 45-64.

Oviatt, B. M., & McDougall, P. P. (2005). Defining international entrepreneurship and modeling the speed of internationalization. *Entrepreneurship Theory and Practice*, *29*, 537-554.

Park, S., LiPuma, J A., & Prange, C. (2015). Venture capitalist and entrepreneur knowledge of new venture internationalization: A review of knowledge components. *International Small Business Journal*, *33*, 901-928.

Patel, P.C., Criaco, G., & Naldi, L. (2016). Geographic Diversification and the Survival of Born-Globals. *Journal of Management*, DOI: 10.1177/0149206316635251

Prashantham, S. (2015). *Born Globals, Networks, and the Large Multinational Enterprise: Insights from Bangalore and Beyond*. Routledge.

Pukall, T. J., & Calabrò, A. (2014). The internationalization of family firms: A critical review and integrative model. *Family Business Review*, *27*, 103-125.

Prashantham, S., & Young, S. (2011). Post-entry speed of international new ventures. *Entrepreneurship Theory and Practice*, *35*, 275-292.

Ramos, E., Acedo, F.J., & Gonzalez, M.R. (2011). Internationalization speed and technological patterns: A panel data study on Spanish SMEs. *Technovation*, *31*, 560-572.

Raymond, L., St-Pierre, J., Uwizeyemungu, S., & Le Dinh, T. (2014). Internationalization capabilities of SMEs: A comparative study of the manufacturing and industrial service sectors. *Journal of International Entrepreneurship*, *12*, 230-253.

Reuber, R. A., & Fischer, E. (1997). The influence of the management team's international experience on the internationalization behaviors of SMES. *Journal of International Business Studies*, *28*, 807-825.

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*, 147-166.

Seifert, R.E., Child, J., & Rodrigues, S.B. (2012). The role of interpretation in the internationalization of smaller Brazilian firms. *Brazilian Administration Review*, *9*, 475-497.

Shepherd, N. G., & Rudd, J. M. (2014). The Influence of context on the strategic decision-making process: A review of the literature. *International Journal of Management Reviews*, *16*, 340–364.

Silverman, D. (2009). *Doing qualitative research*. (3rd ed.). London: Sage.

Sleuwaegen, L., & Onkelinx, J. (2014). International commitment, post-entry growth and survival of international new ventures. *Journal of Business Venturing*, *29*, 106-120.

Smith, W. K., & Tushman, M. L. (2005). Managing strategic contradictions: A top management model for managing innovation streams. *Organization Science*, *16*, 522-536.

Tan, D., & Meyer, K. E. (2010). Business groups' outward FDI: A managerial resources perspective. *Journal of International Management*, *16*, 154-164.

Vanninen, H., Kuivalainen, O., & Ciravegna, L. (2017). Rapid multinationalization: Propositions for studying born micromultinationals. *International Business Review*, *26*, 365-379.

Voss, G.B., & Voss, Z.G. (2013). Strategic ambidexterity in small and medium-sized enterprises: Implementing exploration and exploitation in product and market domains. *Organization Science*, *24*, 1459-1477.

Wally, S., & Baum, J. R. (1994). Personal and structural determinants of the pace of strategic decision-making. *Academy of Management Journal*, *37*, 932-956.

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*, 294-306.

Welch, C., & Piekkari, R. (2006). Crossing language boundaries: Qualitative interviewing in international business. *Management International Review*, *46*, 417-437.

Westhead, P., Wright, M., & Ucbasaran, D. (2001). The internationalization of new and small firms: A resource-based view. *Journal of Business Venturing*, *16*, 333-358.

Yamakawa, Y., Khavul, S., Peng, M.W., & Deeds, D.L. (2013). Venturing from emerging economies. *Strategic Entrepreneurship Journal*, *7*, 181-196.

Zander, I., McDougall, P.P., & Rose, E.L. (2015). Born globals and international business: Evolution of a field of research. *Journal of International Business Studies*, *46*, 27-35.

Zucchella, A., Palamara, G., & Denicolai, S. (2007). The drivers of the early internationalization of the firm. *Journal of World Business*, *42*, 268-280.

**Figure 1 Conceptual framework and hypotheses**

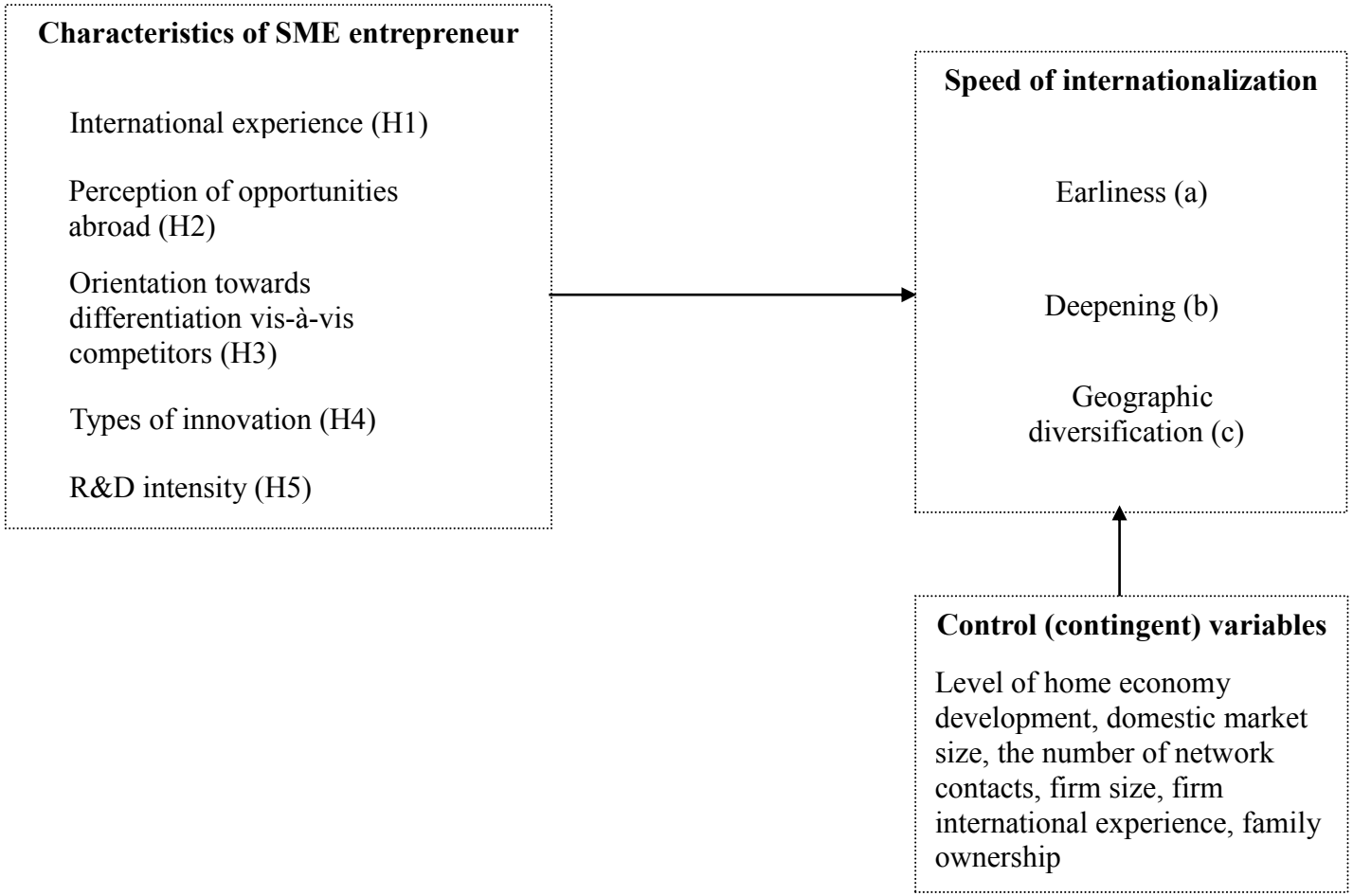

**Table 1 Variables and their measurements**

| Variables | Interview questions | Operational measure(s) |
|---|---|---|
| **Dependent variables** | | |
| Earliness of internationalization | When did your company first make any sales abroad? When was this company founded? | Reverse coding of *the elapsed time between founding of the firm and first international sales* on a scale from 1 to 11 (0 year=11, 1 year=10…10 years and above = 1) |
| Speed of deepening | What is the percentage of your company's sales revenues currently coming from overseas markets? | % of foreign sales / the number of years operating |
| Speed of geographic diversification | Please briefly describe your company's foreign business in terms of regions involved | Total number of geographic regions excluding the home region of SME / the number of years operating |
| **Independent variables** | | |
| International experience of entrepreneur | Did you have experience in doing business internationally prior to joining or founding the firm? | Scored: 0 if No; 1 if Yes |
| Perception of opportunities abroad | What are your reasons for entering foreign markets? | Scored: 0 if not mentioned, 1 if mentioned – see Appendix for derivation. |
| Orientation towards differentiation vis-à-vis competitors | What are your reasons for entering foreign markets? | Scored: 0 if not mentioned, 1 if mentioned – see Appendix for derivation. |
| Types of innovation | Q1. Have you had to develop new products or services as a basis for going abroad? Q2. Have you had to carry out any modification to your existing products or services to supply them abroad? | 1= Exploitation [if Q1 coded 0 (No), Q2 coded 1 (Yes)]; 2= ambidexterity [if Q1 coded 1 (Yes), Q2 coded 1 (Yes)]; 3= exploration [if Q1 coded 1 (Yes), Q2 coded 0 (No)] |
| R&D intensity | How many people do you have working on research and development? | Low = 1, High = 2 |

**Table 1 Variables and their measurements (continued)**

| Variables | Interview questions | Operational measure(s) |
|---|---|---|
| **Control variables** | | |
| Level of home economy development | | Developing economy=1, Developed economy=0 |
| Domestic market size | | Home country GDP (trillion, US$) |
| Network contacts | Which network contacts are key sources of assistance for the firm's internationalization? (For each, scored: 0 if no, 1 if relevant: distributors/agents; customers; suppliers; universities/research institutes; government support agencies in home country; government support agencies abroad; other firms in the region or business/science park; industry/trade associations; board/advisory group; consultants; venture capitalists; banks) | Total number of categories of network contact mentioned |
| Firm size | What is the company's present size in terms of total employment? | Total employment |
| Firm international experience | When did your company first make any sales abroad? | The number of years since the firm first made any sales abroad |
| Family ownership | What is the company's ownership? | Family = 1, Non-family = 0 |

**Table 2 Descriptive statistics and correlations**

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | | | | | | | | | | |
| 2 | .46** | 1 | | | | | | | | | | | | |
| 3 | .39** | .65** | 1 | | | | | | | | | | | |
| 4 | .34** | .29** | .18* | 1 | | | | | | | | | | |
| 5 | .24** | .14 | .04 | -.02 | 1 | | | | | | | | | |
| 6 | .05 | .16* | .18* | .07 | .04 | 1 | | | | | | | | |
| 7 | .26** | .27** | .16 | .33** | .04 | .07 | 1 | | | | | | | |
| 8 | .36** | .28** | .18* | .15* | .00 | .03 | .28** | 1 | | | | | | |
| 9 | .03 | .02 | .21** | -.09 | .09 | .03 | .07 | -.35** | 1 | | | | | |
| 10 | .13 | -.04 | .16* | .08 | -.20** | -.04 | .17* | .04 | .41** | 1 | | | | |
| 11 | .00 | .01 | -.02 | .05 | .09 | -.03 | .13 | .20** | -.21** | .06 | 1 | | | |
| 12 | -.28** | -.31** | -.13 | -.06 | -.02 | -.04 | .02 | -.44** | .39** | .35** | -.03 | 1 | | |
| 13 | -.22** | -.36** | -.35** | -.13 | -.08 | -.08 | -.19* | -.31** | -.10 | -.13 | -.09 | .34** | 1 | |
| 14 | -.32** | -.12 | -.14 | -.18* | -.02 | .00 | .19* | -.34** | .09 | -.10 | -.17* | .25** | .28** | 1 |
| Mean | 7.08 | 6.10 | 0.30 | 0.49 | 0.62 | 0.04 | 1.51 | 1.51 | 0.50 | 2.34 | 4.38 | 3.77 | 12.24 | 0.28 |
| S.D. | 3.88 | 8.04 | 0.48 | 0.50 | 0.49 | 0.19 | 0.68 | 0.50 | 0.50 | 2.88 | 2.53 | 1.24 | 11.33 | 0.45 |

Note: 1, earliness; 2, speed of deepening; 3, speed of geographic diversification; 4, international experience of entrepreneur; 5, perception of opportunities abroad; 6, orientation towards differentiation; 7, types of innovation; 8, R&D intensity; 9, developing economy; 10, domestic market size; 11, network contacts; 12, firm size (log); 13, firm international experience; 14, family ownership
* Correlation is significant at the 0.05 level; ** Correlation is significant at the 0.01 level.

**Table 3 Speed of internationalization**

| ***Dependent variables*** | **Earliness** | | **Speed of deepening** | | |
|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| ***Control variables*** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** |
| Developing economy | .107 (.189) 1.39 | .147 (.059) 1.67 | .089 (.291) 1.47 | .088 (.286) 1.47 | .155 (.065) 1.75 |
| Domestic market size (GDP) | .182 (.023) 1.33 | .127 (.120) 1.81 | -.044 (.593) 1.36 | -.077 (.336) 1.39 | -.110 (.206) 1.91 |
| Number of network contacts | -.019 (.797) 1.11 | -.077 (.235) 1.15 | .008 (.908) 1.11 | .012 (.868) 1.11 | -.003 (.966) 1.15 |
| Firm size (log) | -.344 (.000) 1.38 | -.275 (.000) 1.63 | -.236 (.009) 1.63 | -.181 (.042) 1.70 | -.180 (.040) 1.91 |
| Family ownership | -.217 (.004) 1.15 | -.102 (.131) 1.24 | .020 (.795) 1.20 | .016 (.826) 1.20 | .098 (.166) 1.27 |
| Firm international experience | | | -.285 (.001) 1.34 | -.816 (.000) 7.40 | -.616 (.001) 8.23 |
| Firm international experience² [a] | | | | .556 (.002) 6.63 | .439 (.010) 7.16 |
| ***Entrepreneur characteristics*** | | | | | |
| International experience | | .253 (.000) 1.16 | | | .183 (.008) 1.19 |
| Perception of opportunities abroad | | .258 (.000) 1.14 | | | .087 (.196) 1.14 |
| Orientation towards differentiation | | .055 (.370) 1.03 | | | .145 (.025) 1.04 |
| Exploratory innovation# | | .061 (.362) 1.24 | | | .180 (.013) 1.28 |
| Ambidextrous innovation# | | .158 (.027) 1.38 | | | .112 (.137) 1.42 |
| R&D intensity | | .197 (.011) 1.64 | | | .137 (.094) 1.66 |
| $R^2$ | 0.192 | 0.402 | 0.177 | 0.224 | 0.355 |
| Adjusted $R^2$ | 0.169 | 0.363 | 0.148 | 0.192 | 0.304 |
| F value | 8.148 | 10.10 | 6.099 | 6.956 | 6.913 |
| Probability | .000 | .000 | .000 | .000 | .000 |
| N | 176 | 176 | 176 | 176 | 176 |

# exploitative innovation as the reference category

[a] Firm international experience² is the square of firm international experience.

**Table 3 Speed of internationalization (continued)**

| ***Dependent variables*** | **Speed of geographic diversification** | | |
|---|---|---|---|
| | Model 6 | Model 7 | Model 8 |
| ***Control variables*** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** | ***β* (*P-value)* VIF** |
| Developing economy | .211 (.014) 1.46 | .209 (.011) 1.46 | .272 (.002) 1.74 |
| Domestic market size (GDP) | .090 (.270) 1.35 | .053 (.498) 1.37 | -.019 (.836) 1.86 |
| Number of network contacts | -.007 (.926) 1.11 | -.003 (.961) 1.11 | -.005 (.942) 1.15 |
| Firm size (log) | -.154 (.086) 1.63 | -.086 (.328) 1.70 | -.060 (.515) 1.92 |
| Family ownership | -.030 (.697) 1.20 | -.035 (.638) 1.20 | .020 (.790) 1.27 |
| Firm international experience | -.256 (.002) 1.33 | -.908 (.000) 7.44 | -.838 (.000) 8.35 |
| Firm international experience² | | .682 (.000) 6.69 | .649 (.000) 7.28 |
| | | | |
| ***Entrepreneur characteristics*** | | | |
| International experience | | | .079 (.272) 1.20 |
| Perception of opportunities abroad | | | -.010 (.888) 1.14 |
| Orientation towards differentiation | | | .157 (.020) 1.04 |
| Exploratory innovation# | | | .051 (.491) 1.28 |
| Ambidextrous innovation# | | | .112 (.155) 1.42 |
| R&D intensity | | | .126 (.140) 1.66 |
| | | | |
| $R^2$ | 0.169 | 0.239 | 0.299 |
| Adjusted $R^2$ | 0.140 | 0.207 | 0.242 |
| F value | 5.747 | 7.538 | 5.303 |
| Probability | .000 | .000 | .000 |
| N | 175 | 175 | 175 |

# exploitative innovation as the reference category

**Table 4 Test of Robustness**

| ***Dependent variables*** | **Earliness** | | | **Speed of deepening** | | |
|---|---|---|---|---|---|---|
| | Model 9 | Model 10 | Model 11 | Model 12 | Model 13 | Model 14 |
| ***Control variables*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** |
| Developing economy | | .148 (.064) | .151 (.055) | | .172 (.041) | .158 (.060) |
| Domestic market size (GDP) | | .124 (.131) | .126 (.122) | | -.138 (.117) | -.112 (.201) |
| Number of network contacts | | -.066 (.315) | -.087 (.193) | | -.005 (.939) | -.015 (.834) |
| Firm size (log) | | -.266 (.001) | -.286 (.000) | | -.162 (.066) | -.191 (.033) |
| Family ownership | | -.086 (.235) | -.092 (.184) | | .051 (.494) | .109 (.136) |
| Firm international experience | | | | | -.710 (.000) | -.628 (.001) |
| Firm international experience² | | | | | .487 (.005) | .450 (.009) |
| *Software** | | .056 (.512) | | | -.167 (.080) | |
| *Biotech** | | -.023 (.794) | | | -.151 (.103) | |
| *Proactivity* | | | .043 (.544) | | | .047 (.523) |
| | | | | | | |
| ***Entrepreneur characteristics*** | | | | | | |
| International experience | .274 (.000) | .259 (.000) | .248 (.000) | .202 (.005) | .169 (.015) | .177 (.012) |
| Perception of opportunities abroad | .249 (.000) | .250 (.000) | .253 (.000) | .136 (.045) | .103 (.129) | .082 (.229) |
| Orientation towards differentiation | .080 (.215) | .054 (.380) | .056 (.364) | .186 (.007) | .149 (.021) | .145 (.025) |
| Exploratory innovation# | .041 (.565) | .081 (.260) | .057 (.396) | .200 (.008) | .192 (.012) | .175 (.016) |
| Ambidextrous innovation# | .148 (.032) | .159 (.026) | .158 (.027) | .000 (.998) | .122 (.105) | .114 (.132) |
| R&D intensity | .297 (.000) | .194 (.020) | .192 (.015) | .214 (.003) | .189 (.029) | .130 (.115) |
| | | | | | | |
| $R^2$ | 0.313 | 0.406 | 0.404 | 0.231 | 0.369 | 0.357 |
| Adjusted $R^2$ | 0.288 | 0.359 | 0.360 | 0.204 | 0.311 | 0.301 |
| F value | 12.885 | 8.585 | 9.254 | 8.506 | 6.287 | 6.425 |
| Probability | .000 | .000 | .000 | .000 | .000 | .000 |
| N | 176 | 176 | 176 | 176 | 176 | 176 |

*clothing industry as the reference category
# exploitative innovation as the reference category

**Table 4 Test of Robustness (continued)**

| ***Dependent variables*** | **Speed of geographic diversification** | | |
|---|---|---|---|
| | Model 15 | Model 16 | Model 17 |
| ***Control variables*** | ***β* (*P-value)*** | ***β* (*P-value)*** | ***β* (*P-value)*** |
| Developing economy | | .280 (.002) | .272 (.002) |
| Domestic market size (GDP) | | -.023 (.803) | -.019 (.837) |
| Number of network contacts | | .008 (.912) | -.005 (.946) |
| Firm size (log) | | -.053 (.566) | -.059 (.527) |
| Family ownership | | .026 (.744) | .020 (.797) |
| Firm international experience | | -.821 (.000) | -.838 (.000) |
| Firm international experience² | | .635 (.001) | .649 (.000) |
| *Software** | | .029 (.774) | |
| *Biotech** | | -.062 (.525) | |
| *Proactivity* | | | -.001 (.994) |
| | | | |
| ***Entrepreneur characteristics*** | | | |
| International experience | .123 (.114) | .085 (.246) | .079 (.277) |
| Perception of opportunities abroad | .036 (.620) | -.015 (.831) | -.010 (.890) |
| Orientation towards differentiation | .211 (.004) | .158 (.020) | .157 (.021) |
| Exploratory innovation# | .096 (.233) | .081 (.311) | .051 (.494) |
| Ambidextrous innovation# | .047 (.551) | .114 (.150) | .112 (.156) |
| R&D intensity | .137 (.072) | .135 (.134) | .126 (.144) |
| | | | |
| $R^2$ | 0.110 | 0.304 | 0.299 |
| Adjusted $R^2$ | 0.079 | 0.238 | 0.238 |
| F value | 3.498 | 4.652 | 4.894 |
| Probability | .003 | .000 | .000 |
| N | 175 | 175 | 175 |

*clothing industry as the reference category
# exploitative innovation as the reference category

**Appendix. Illustrations of SME entrepreneurs' reasons for internationalization**

| First-order theme | Second-order theme | Illustrative quotations |
|---|---|---|
| Statements showing what interviewees described as their reason for entering foreign markets | Perception of opportunities abroad | In India, we have lots of firms producing cotton clothing so the opportunities in domestic market are very limited. Foreign companies normally give large orders and their margins are much higher than domestic market.<br><br>The Egyptian market is unfortunately declining. Therefore, we need an export market.<br><br>Huge potential. The size of the market is considerably bigger than the local market. |
| | Orientation towards differentiation vis-à-vis competitors | The domestic market is declining and factories are accepting lower profit rates to survive. Since I am working with tourist markets, I was encouraged [by these clients] and inclined to export which gets me distinguished from others.<br><br>Doing business abroad can broaden our horizons, helping us with our differentiation in the market.<br><br>Our market is the global digital economy itself, it's huge…If we don't do it [international expansion] then somebody somewhere else is going to come and do something similar, or try to. So I think we've got to seize the day, to a certain extent, and go and expand. If we don't compete globally then we're not going to be able to compete at all, so we just have to start the journey. |