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Entrepreneurial proclivity, capability upgrading and performance advantage of newness among international new ventures

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Abstract
In spite of a notable interest surrounding the learning advantages of newness (LAN), centered on the emergent international entrepreneurship literature, we have only limited understanding of how young international new ventures (INVs) acquire learning advantages and avoid the liabilities of newness and foreignness in order to achieve LAN-related performance from early internationalization. In this article, two related but conceptually distinct capability upgrading constructs – knowledge capability upgrading and network capability upgrading – are identified to serve as mediating mechanisms that link entrepreneurial proclivity and LAN-related performance. Our findings from a sample of 436 young INVs from China provide supporting evidence for the mediating effect of capability upgrading, particularly among relatively larger new ventures and those operating with cost/price advantages in the international marketplace. This study fills a gap in the under-researched area of literature surrounding INVs from emerging economies, and demonstrates how young international venturing firms can leverage the entrepreneurial dynamics of learning to achieve growth opportunities from early internationalization.
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INTRODUCTION

A growing stream of research on new venture internationalization has documented that some young firms are capable of achieving success in global markets earlier, and more rapidly, than what has been observed previously. Such firms have been described as "born globals" (Knight & Cavusgil, 1996; Rennie, 1993) or, in the case of McDougall, Shane, and Oviatt (1994) and Oviatt and McDougall (1994), represent international new ventures (INVs). Thus an INV from inception, or shortly thereafter, seeks to derive significant competitive advantage by maximizing the use of resources to leverage sales in multiple countries (Oviatt & McDougall, 1994; Zahra, Ireland, & Hitt, 2000).

Relating to this notion, several terms have appeared in the literature that are similar to or synonymous with INVs: these include "global start-ups", "instant internationals" and "early or young internationalizing firms" (Rialp, Rialp, & Knight, 2005).

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To be consistent with other quantitative definitions of INVs pertaining to export activities, in this study INVs are defined as independently operating small and medium-sized firms with export sales that represent at least 20% of their total sales within 3 years of inception (Fan & Phan, 2007; Knight & Cavusgil, 2004; Madsen, Rasmussen, & Servais, 2000).

In light of the subject area, scholars have studied the driving forces leading to the rise of INVs in today's global economy (Fan & Phan, 2007; Knight & Cavusgil, 1996; Oviatt & McDougall, 1994), and the factors that influence their performance outcomes (Autio, Sapienza, & Almeida, 2000; Knight & Cavusgil, 2004; Zahra et al., 2000) and their survival (Mudambi & Zahra, 2007; Sapienza, Autio, George, & Zahra, 2006). This stream of research tends to build on two general theoretical perspectives. The first is entrepreneurship focused, and attempts to explain new venture internationalization as a form of entrepreneurial behavior. It is characterized by the attitudes among entrepreneurial managers in light of their innovative, proactive and risk-taking behavior in international markets (Jones & Coviello, 2005; McDougall & Oviatt, 2000). This viewpoint is exemplified through the characteristics of entrepreneurial orientation or proclivity (Covin & Slevin, 1989; Lumpkin & Dess, 1996; Matsuno, Mentzer, & Özsomer, 2002), which are conducive to promoting competitive advantage and creating value in early internationalization (Knight & Cavusgil, 2004; Zahra, 2005).

The second perspective is more learning based, and focuses primarily on the learning attention and effort that are devoted to acquiring new market knowledge (Autio et al., 2000; Sapienza, De Clercq, & Sandberg, 2005; Zahra et al., 2000). This approach is probably best epitomized by considering research relating to the *learning advantages of newness* (LAN). Introduced by Autio et al. (2000), the LAN hypothesis posits that INVs that enter international markets early on in their life cycles have inherent learning advantages over late entrants. Its central rationale is that early-internationalizing firms tend to possess fewer deeply embedded routines, and face less cognitive complexity and structural rigidity. Therefore they tend to recognize more easily and respond rapidly to new opportunities in international markets that lead to successful expansion, growth, and other performance advantages.

One premise underlying these two perspectives is that INVs may deploy a unique package of resources and capabilities in order to bypass the time-based accumulation of experience and knowledge that historically has served as a prerequisite for international expansion (Jones & Coviello, 2005; Oviatt & McDougall, 2005). However, both theoretically and empirically, this premise has yet to be determined. In particular, we have limited understanding of how INVs acquire LAN and performance advantages from early internationalization (Sapienza et al., 2006), and increase their odds of international success through being more entrepreneurial (Zahra, 2005). These issues are important, most notably because prior research suggests that new ventures that enter international markets early usually suffer from the liabilities of newness (Hymer, 1976) and foreignness (Luo & Mezias, 2002; Zaheer, 1995). Scholars in the area claim that such liabilities can dampen their viability and increase the likelihood of failure in international markets (Mudambi & Zahra, 2007; Sapienza et al., 2006).

With this in mind, this study seeks to improve our understanding of the mechanisms underlying LAN-related performance advantages in new venture internationalization. We identify two related but conceptually distinct capability upgrading constructs – knowledge capability upgrading and network capability upgrading – which serve as mediating mechanisms that link entrepreneurial proclivity and LAN-related performance. Theoretically, this study integrates the entrepreneurial orientation of INVs and the LAN perspective by examining a mediating path of capability upgrading in relation to desired performance advantages among young INVs.

Given that the emergence of INVs is a worldwide phenomenon, and the sheer paucity of research on firms from developing or emerging economies (Rialp et al., 2005; Yamakawa, Peng, & Deeds, 2008), we decided to test our concept in the context of INVs from China, the world's largest emerging market. Indeed, it has been observed in recent years that China's new ventures are expanding rapidly in international markets (Luo & Tung, 2007; Yiu, Lau, & Bruton, 2007), and therefore the investigation provides a favorable platform for expanding current knowledge surrounding new venture internationalization.

INVs AND LAN

In one of the earliest empirical investigations of the subject, Rennie (1993) highlighted the rise of "born globals" among manufacturing exporters. At approximately the same time Oviatt and

McDougall (1994) and McDougall et al. (1994) coined the phrase "international new ventures" to describe such firms, and provided a typology consisting of varying degrees of international involvement that encompass everything from low-level export market entry to the advancement of more complex international operations. Scholars have since tended to base their theoretical and empirical investigations concerning INVs (or born globals) on firm exporting activities (e.g., Andersson & Wictor, 2003; Knight & Cavusgil, 2004; Madsen et al., 2000).

In this literature, new venture internationalization tends to be characterized as an international market entry process that occurs within 3 years of a firm's inception (Knight & Cavusgil, 2004; Madsen & Servais, 1997). This is uniquely distinct from such traditional Uppsala stage theories (Johanson & Vahlne, 1977, 1990), which describe internationalization as a planned sequential process whereby a firm over a relative period of time steadily accumulates international experience and knowledge before gradually committing more resources to international markets.

While time-based routines and experience developed in domestic markets may provide credibility for facilitating a firm's international expansion, there is also the need to recognize and appreciate that some young firms can acquire LAN through venturing into international markets at an early stage of their life (Sapienza et al., 2006; Zahra, 2005). First introduced by Autio et al. (2000), LAN assumes that the earlier a firm enters an international market in its life cycle, the better international performance it subsequently achieves. According to these researchers, early internationalization can induce and promote the process of acquiring knowledge and assimilating this as an asset into the firm's knowledge base, which in turn is considered a key source of LAN that leads to positive performance implications for new venture internationalization (Autio et al., 2000; Sapienza et al., 2005). In principle, LAN provides an important theoretical foundation for the growth leverage associated with success among INVs. We want to advance the argument further by examining a new venture's entrepreneurial proclivity, which entails the dynamics of learning directed at upgrading appropriate resources and capabilities, thereby giving rise to its learning advantages for achieving performance implications of LAN.

Providing further insights in this area, Sapienza et al. (2006) highlighted three specific organizational advantages underlying the LAN hypothesis. The first is *structural*, and refers to the fact that, compared with older firms, young firms have less-established routines, face fewer interior constraints, and can more easily identify and explore new opportunities in international markets. The second is *cognitive*, suggesting that young firms face fewer competency traps than do more established firms, and are generally not isolated from certain types of knowledge. Because of this cognitive advantage, young firms learn quickly, and regard the international market with an open mind. Finally, the third advantage, *positional*, refers to the fact that, unlike well-established firms, young firms have fewer bonded ties with domestic partners, and therefore face less resistance to developing relationships in international markets.

In developing a concept around the notion of LAN, Zahra, Zheng, Yu, and Yavuz (2006) identified a set of boundary conditions that can facilitate (or impede) the learning process among young internationalizing firms. They suggest that LAN is more likely to accrue when firms satisfy certain organizational and social conditions that relate to their strategic intent, resource endowment, organizational structure and overall position within their own social networks. In their view, these conditions are likely to amplify the LAN effect, so that younger internationalizing firms can grow more rapidly through *exploratory* learning (as opposed to *experiential* learning) in international markets.

Many of these arguments suggest that the LAN concept, along with its driving mechanisms and performance implications, is worthy of further investigation. Instead of assuming that new ventures gain LAN via experiential knowledge acquired through internationalization behavior (Zahra et al., 2000), we argue that a form of entrepreneurial-based learning takes place (and can instigate LAN) when the new venture's strategic intent is characterized as being more entrepreneurial toward international markets. We believe new ventures that internationalize at similar ages will not necessarily have the same LAN and performance advantages. Rather, what matters the most seems to be a firm's entrepreneurial proclivity for exploratory learning at the national and international level, which most likely creates the resources and capabilities in order to drive LAN-related performance. Next, we extend this argument and then develop our theoretical model by linking entrepreneurial proclivity to LAN-related performance through the mediating mechanisms of

both knowledge and network capability upgrading functions.

ENTREPRENEURIAL PERSPECTIVES OF NEW VENTURE INTERNATIONALIZATION

Most scholars researching in the field of new venture internationalization agree that a key aspect of early internationalizing firms' advantages lies in their entrepreneurial values. This allows firms to rapidly identify international opportunities and develop their capabilities accordingly in order to obtain success. The pertinent literature suggests that entrepreneurial orientation (or proclivity) is a critical determinant in both the initiation and subsequent performance outcomes of early internationalization (Jones & Coviello, 2005; Knight & Cavusgil, 2004; Oviatt & McDougall, 1994; Zahra, 2005).

Notably, McDougall et al. (1994) state that many newly internationalizing firms make an early leap into the international marketplace because of their unique entrepreneurial characteristics and outlook. Entrepreneurs frequently possess specific skills and knowledge that allow them to identify and exploit windows of opportunities that are unseen by most. As a result, such firms are able to adopt an early internationalization strategy as a pathway that leads to growth and success. In contrast to traditional stage models of internationalization, which consider foreign experiential knowledge as the main thrust of resource commitment in foreign markets, new venture internationalization is more dependent upon entrepreneurial knowledge and vision in order to seek international opportunities in a rapid fashion (Autio et al. 2000; Zahra, 2005).

In light of this, entrepreneurial sources of knowledge may have an augmented effect on early internationalization, which is probably best explained as a knowledge-based mechanism, and yet is not regulated by the experience-based accumulation of international knowledge on markets and institutions. While Autio and colleagues advanced our understanding of the performance impact of a firm's age at internationalization, the entrepreneurial influence on LAN and its related performance implications have not been fully realized.

Also, and in reflecting on the primary domain of entrepreneurial orientation, INVs are posited to engage in exploratory learning through successfully being proactive and innovative, and through managing risks effectively across national borders (Sapienza et al., 2005). Further, through innovation, experimentation, flexibility and discovery (March, 1991), this form of learning enables a firm to access different resources, particularly network and knowledge bases, which often facilitate new venture internationalization (Oviatt & McDougall, 2005).

The concept provided by Jones and Coviello (2005) emphasizes a dynamic process of entrepreneurial learning, whereby the entrepreneur is considered the key antecedent of an INV. The characteristics of the entrepreneur in an INV conceivably influence a firm's overall entrepreneurial orientation – thus creating an appropriate structure that allows for innovation, creativity and carefully managed risk-taking. This structure is, in turn, linked to the firm's internationalization behavior and ultimately its international performance. Jones and Coviello argue that a learning loop exists, and this assimilates new market knowledge into a firm's knowledge base at different stages in the business life cycle. Their theoretical framework posits entrepreneurial characteristics in a positive state, as antecedents for understanding internationalization behavior and performance outcomes of early and rapid internationalization.

The central focus on the entrepreneurial nature of new venture internationalization – with its emphasis on opportunity identification and exploration – reflects a paradigm shift from traditional models of internationalization that have historically focused on the time-based accumulation of knowledge and resources (Oviatt & McDougall, 2005; Zahra, 2005). Although some of these theoretical developments have explicitly noted that the entrepreneurial aspects of INVs can trigger a process of exploratory learning to push forward-looking knowledge and network-based capabilities, it is still largely unknown as to whether this relationship exists, or how such a relationship may be leveraged to provide new ventures with LAN-related performance advantages (Zahra, 2005).

THEORETICAL MODEL AND HYPOTHESES

This article theoretically and empirically examines international entrepreneurial proclivity- and capability-upgrading mechanisms that give rise to a young new venture's learning advantages for achieving the performance implications of LAN. We developed our arguments by drawing on the conceptualization of entrepreneurial proclivity's influence on market-scanning activities and responsiveness (Matsuno et al., 2002), as well as the network dynamics of reconfiguration – as it evidently exists in INV firms (Coviello, 2006;

Coviello & Cox, 2006). Entrepreneurial proclivity is defined as the organization's predisposition to accept entrepreneurial processes, practices and decision-making (Matsuno et al., 2002). This study argues that through proactive, risk-taking and innovative underpinnings of entrepreneurial proclivity, young INVs are better able to rapidly configure resources to upgrade the knowledge and network capabilities that give rise to LAN-related performance.

The notion of capability upgrading draws on the research of Luo (2000), who suggests that it forms a key building block for the creation of the new capabilities that are needed for international expansion. Here we emphasize the entrepreneurial dynamics of learning as a driving factor for capability upgrading, which in turn serves as a means to gain LAN and its related performance associated with early internationalization. Specifically, through the entrepreneurial process of capability upgrading, young international venturing firms can translate dynamic learning into new bundles of distinctive resources that minimize the vulnerability associated with early and rapid entry into international markets.

This appears to be particularly evident when considering the liability of foreignness among INVs from developing or emerging economies (Yamakawa et al., 2008), where, unlike those INVs established from relatively more advanced markets, which are often well equipped with the necessary managerial expertise and ample information resource provisions for accessing new market opportunities, firms from emerging economies tend to be in a more disadvantaged position when attempting to grapple with international markets. It is therefore reasonable to argue that because of their often limited information provision and exposure to international markets, the entrepreneurial dynamics of capability upgrading would be a more viable means for them to convert learning advantages (or reduce liabilities of newness and foreignness) into the performance benefits associated with early internationalization.

The conceptual framework presented in Figure 1 positions international entrepreneurial proclivity as a crucial component for driving both a new venture's knowledge capability upgrading and its network capability upgrading, which in turn enhance LAN-related performance in early internationalization. The central thrust of the framework lies in the theoretical insights grounded in the entrepreneurial perspectives of new venture

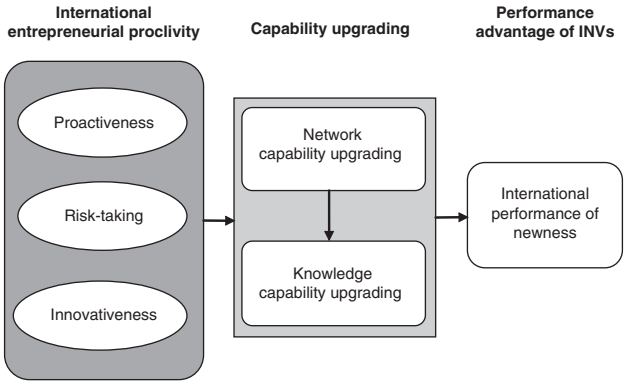

Figure 1 Entrepreneurial proclivity, capability upgrading and performance of international new ventures (INVs): the mediating path.

internationalization (Oviatt & McDougall, 2005; Zahra, 2005) and the notion of capability upgrading (Luo, 2000). We therefore argue that a young international venturing firm's entrepreneurial action and resources can be usefully combined to provide new capabilities that contribute to its competitive advantage in international markets. The concept views international entrepreneurial proclivity as a market-oriented organizational learning culture (Dimitratos & Plakoyiannaki, 2003; Matsuno et al., 2002; Slater & Narver, 1995), which provides the global vision and norms that shape a decision-maker's attitude toward proactive, risk-taking and innovative behavior.

In the absence of unique or new resources, INVs with high levels of entrepreneurial proclivity are often more open to build and upgrade their capabilities rapidly when expanding into less familiar international territories (Knight & Cavusgil, 2004; Lumpkin & Dess, 1996). New ventures therefore need to upgrade their capabilities by leveraging their relationship networks and acquiring market knowledge to meet the dynamic requirements of the external environment and thus generating LAN benefits. Entrepreneurial proclivity is therefore seen here as the catalyst for developing appropriate relationship networks, acquiring appropriate knowledge, and absorbing this into the firm's knowledge base, which forms a key source of LAN that leads to positive performance (Autio et al., 2000; Sapienza et al., 2005; Zahra, 2005).

In light of the central focus of this study, we reinforce the argument that by virtue of early entry into international markets, new ventures may not automatically enjoy the benefits of LAN (Sapienza et al., 2005; Zahra, 2005). Our research model

therefore addresses the need to recognize how newer ventures take advantage of the context provided by early internationalization to capitalize on entrepreneurial dynamics of learning to quickly upgrade resources and capabilities for successful expansion and performance (Mathews & Zander, 2007; Zahra, 2005). The theoretical argument suggests that early entry into international markets provides no guarantee that firms can achieve the performance implications of LAN.

Recognizing the liabilities of being young, as well as the inherent dangers associated with entrepreneurial risk-taking decisions, we emphasize the firm's capacity to assemble and deploy value-creating resources to offset the various liabilities and thus gain the competitive advantages of early internationalization. Our study adds to the literature, as we argue that while early internationalization can become a source of competitive advantage for INVs, it can be achieved through the effects of entrepreneurial dynamics of learning and capability upgrading.

Knowledge Capability Upgrading and LAN-related Performance

Acquiring international market knowledge is an essential element for the rapid growth of INVs (Autio et al., 2000). For most new ventures, knowledge capability upgrading relies significantly upon rapidly obtaining situation-specific, precise, up-to-date knowledge (Yeoh, 2000; Zahra et al., 2000). As noted earlier, one way to conceptualize a new venture's capability-upgrading process is to regard it simply as the entrepreneurial dynamics of learning across borders (Sapienza et al., 2005). In the entrepreneurial learning framework derived by Matsuno et al. (2002), the three dimensions of entrepreneurial proclivity collectively evoke a market-oriented learning culture, which values active market information acquisition, as well as the transformation of market knowledge into economically rewarding products and services.

Entrepreneurial proclivity constitutes the norms for firms to place greater emphasis on the discovery, enactment, evaluation and exploitation of opportunities: that is, it provides knowledge of where to go to obtain relevant international information, and how to deploy the resources obtained effectively (Matsuno et al., 2002; Slater & Narver, 1995). The entrepreneurial effort needed to extract knowledge and build the relevant capabilities seems to affect the accomplishment of LAN-related performance in INVs.

Whereas the innovative dimension of entrepreneurial proclivity is theorized as promoting the acquisition of knowledge through market scanning and information utilization (Knight & Cavusgil, 2004), the risk-taking dimension is believed to provide a base of knowledge through careful management and consideration of international opportunities (Oviatt & McDougall, 2005). Proactiveness, meanwhile, is judged to offer a forward-looking perspective that represents a tendency to take initiatives in the marketplace for enhancing market knowledge (Lumpkin & Dess, 1996). In the context of new venture internationalization, these entrepreneurial characteristics are influential in promoting new ventures and, specifically, in identifying new market opportunities ahead of the competition (Oviatt & McDougall, 1994; Zahra, 2005). Such entrepreneurial spirit enables INVs to act on these opportunities, which can contribute further to an increase in both intelligence generation and responsiveness (Knight & Cavusgil, 2004).

The entrepreneurial source of market knowledge is not confined to organizational routines and administrative structures, but is characterized rather by exploration and "out-of-the-box" thinking in the pursuit of opportunities (Slater & Narver, 1995). Entrepreneurial proclivity is therefore judged to drive a firm's market knowledge capability through promoting information sharing and the knowledge access ability needed in order to improve market performance (Matsuno et al., 2002). Thus, in congruence with the LAN argument, young internationalizing firms (without sufficient time, resources or the adequate prior experience needed for accumulating relevant knowledge and capability) tend to engage in learning through less structured routines and an open-minded posture – a reflection of newer firms' structural and cognitive advantages pertaining to LAN in early internationalization (Autio et al., 2000; Sapienza et al., 2006). It is therefore posited that international entrepreneurial proclivity positively enhances knowledge capability upgrading among INVs, which in turn leads to performance advantages of newness in early internationalization.

At the practical level, the extent to which INVs are proactive in their approach to international markets, and take initiatives in the international marketplace by regularly attending trade shows and visiting international markets, seeking international contacts, monitoring export markets and exploring international business opportunities, is considered to play a key role in generating market

intelligence and the acquisition of international market knowledge. Such entrepreneurial spirit, reflecting a proactive approach in international markets, is therefore posited to have a positive bearing on the acquisition and upgrading of knowledge capability, which in turn leverages performance advantages in early internationalization. Following this discussion, we hypothesize that:

Hypothesis 1a: The positive relationship between proactiveness in international venturing and the performance advantage of newness in early internationalization is mediated by knowledge capability upgrading.

We also advocate that INVs carefully balance risk against opportunities when contemplating their international expansion, being tolerant of potential risks, having a shared vision toward risks and considering calculated risk-taking opportunities. Risk-taking propensity has been suggested as a prerequisite for INVs seeking growth opportunities in global markets (Oviatt & McDougall, 1994; Zahra, 2005). New venture internationalization is an inherently uncertain undertaking: this is particularly evident when internationalization takes firms from emerging markets into unfamiliar and also potentially more challenging foreign markets.

Luo and Tung (2007) argue that, as latecomers on the global stage, emerging-market firms need to embrace more aggressive and risk-taking measures so as to compensate for their competitive weaknesses. Without taking bold steps with foreign operations, entrepreneurs' learning ability to gain access to and upgrade value-creating resources in foreign domains may be extremely limited (Sapienza et al., 2005). Recognizing that unbridled risk-taking may result in costly mistakes, and engender inferior performance, we posit that successful INVs are those that can take prudent measures to rapidly acquire and upgrade their knowledge capacity so as to enhance performance advantages in early internationalization. We therefore hypothesize that:

Hypothesis 1b: The positive relationship between risk-taking in international venturing and the performance advantage of newness in early internationalization is mediated by knowledge capability upgrading.

Finally, and through having an innovative approach to international markets, such as encouraging new product specifications, finding innovative ways to exploit markets, undertaking unique ways to search for export markets and being willing to work with new international suppliers and customers, INVs are ideally positioned (because they are open and innovative) for upgrading their knowledge capabilities, which will facilitate international venturing success. By fostering innovativeness within entrepreneurial INVs, managers are devoted to encourage new ways of thinking, and to champion promising ideas that contribute to new product and market development strategies (Knight & Cavusgil, 2004).

From a learning capability perspective, such characteristics tend to stimulate young firms not to develop (or to eliminate) the cognitive complexity and structural rigidity that inhibit the entrepreneurial dynamics of learning from early internationalization (Jones & Coviello, 2005). Thus the innovative underpinning of entrepreneurial proclivity enhances the level of learning effort (Sapienza et al., 2005) and information gathering (Matsuno et al., 2002). Through greater information acquisition in international venturing, young entrepreneurial firms are able to create a competitive advantage by being better able to develop and upgrade their new market knowledge base. Because of their lack of global experience, managerial competence and professional expertise, emerging-market firms need to be more open-minded and seek new ways of learning from other global players, so that they can secure critical resources and upgrade their knowledge capabilities for the success of international venturing (Luo & Tung, 2007). In response we hypothesize that:

Hypothesis 1c: The positive relationship between innovativeness in international venturing and the performance advantage of newness in early internationalization is mediated by knowledge capability upgrading.

Network Capability Upgrading and LAN-related Performance

In the international business and strategic management literature, networks of relationships have been widely recognized as an important resource that can be leveraged to provide competitive advantage (Chen, 2003; Ellis, 2000; Johanson & Vahlne, 2003; Li & Zhang, 2007; Peng & Luo, 2000). Increasingly, theoretical models of INVs embrace many of the issues regarding the importance of networks (Coviello, 2006; Oviatt & McDougall, 2005). One argument is that networks provide an opportunity for INVs to

gain access to resources they would be unable to develop themselves (Oviatt & McDougall, 1994; Zahra, 2005). Such network-based capacity can arguably contribute as a further means to help explain LAN and its performance implications.

Coviello and Cox (2006) provide empirical evidence to demonstrate how networks can be useful for enabling INVs to acquire resources over time. The results of their investigation reveal that, through rapidly leveraging resources from their network partners, INVs can overcome the liabilities of newness and foreignness in a manner that secures resources pertaining to the strategic situation of early internationalization. In reporting on the dynamic nature of ties in INV networks, Coviello (2006) suggests that INV entrepreneurial action is related to network dynamics. Specifically, INVs proactively build contacts beyond their initial networks so as to enhance the strategic position of their network evolution for creating international growth opportunities. To some extent, this is the process that is reflective of how INVs may build on their entrepreneurial dynamics of learning to embrace the positional advantages of the LAN hypothesis for helping young international firms to achieve successful performance (Autio et al., 2000; Sapienza et al., 2006).

One important implication is that INVs benefit from their networks, not simply because of the resource advantages *per se*, but rather because of their instrumental value for upgrading competitive capability and information provision during the course of early internationalization. This suggests that INVs with superior network capabilities can maximize the likelihood of their acquiring the right kind of resources that are likely to provide beneficial outcomes (Makadok, 2001). Network capability upgrading may therefore offer an effective means through which an INV can overcome the disadvantages associated with newness and foreignness in international venturing.

By extending entrepreneurship theory pertaining specifically to INVs, we further argue that international entrepreneurial proclivity is a driving force that positively affects INV network capability upgrading. Although the theoretical foundation of INV networks embraces the argument surrounding the entrepreneurial nature of INVs (Coviello, 2006), this development focuses primarily on traditional network dynamics that are established and developed over time. Research pertaining to entrepreneurial actions for enhancing network capability upgrading in the pursuit of growth from early internationalization and LAN-related performance, in particular, remains inconclusive and underresearched.

At a general level, internationalizing firms that are proactive in seeking network capabilities often have a better chance of selecting reliable foreign partners, nurturing their relationships effectively, and acquiring up-to-date knowledge for improving performance (Harris & Wheeler, 2005; Hoang & Antoncic, 2003). We therefore argue here that international entrepreneurial proclivity prompts INVs to upgrade their network capabilities: thus, through providing informational advantages, risk alleviation and resource mobilization, network capability upgrading is able to improve LAN-related performance advantages.

For young internationalizing firms from emerging economies, such entrepreneurial processes, involving the development of appropriate relationship networks, may represent an efficient and effective way to sustain international growth from the outset. This is particularly evident in the context of this investigation as, historically, Chinese firms have tended to call on their extensive social networks to acquire knowledge and to tap into resources (Li & Zhang, 2007; Peng & Luo, 2000). As the discussion of interest centers on examining the general phenomenon of INVs, it is posited that international entrepreneurial proclivity positively enhances network capability upgrading among INVs, which in turn leads to the performance advantages of newness in early internationalization.

Research by Coviello and Cox (2006) suggests that INVs tend to be proactive in acquiring resources through their networks, and demonstrate a willingness to explore foreign markets, particularly in their early stages of development. These findings suggest that an INV's proactive outlook can therefore influence the desired network-based acquisition of resources. The premise of network capability upgrading is that entrepreneurial action stimulates resourceful network relations for enhancing INVs to acquire appropriate and beneficial resources needed for enhancing LAN-related performance. We therefore hypothesize that:

Hypothesis 2a: The positive relationship between proactiveness in international venturing and the performance advantage of newness in early internationalization is mediated by network capability upgrading.

By being willing to take on, and effectively manage, the risk attached with entering international markets at the early stage of their life cycle, new ventures are likely to be more flexible and adaptive in responding to foreign partners' requests, and to the changing needs of international markets (Shrader, Oviatt, & McDougall, 2000). Furthermore, because of their less-established ties with domestic firms – a positional advantage of newness (Autio et al., 2000; Sapienza et al., 2006) – young INVs are also more willing to take bold steps to configure and upgrade their network structure overseas in order to rapidly secure mobilized resources at minimal cost (Coviello, 2006). Without owning network resources (e.g., the international distribution channel), INVs are able to reduce the risk and uncertainty that are often inherent in international operations, thereby enhancing the speed with which they upgrade the strategic value of their network capability. Based on this discussion, we therefore hypothesize that:

Hypothesis 2b: The positive relationship between risk-taking in international venturing and the performance advantage of newness in early internationalization is mediated by network capability upgrading.

Furthermore, in the pursuit of early internationalization, the innovativeness associated with entrepreneurial proclivity is likely to encourage new venture learning through market innovations developed by other firms (Lewin & Massini, 2003). Establishing strategic relationships with foreign partners can therefore also facilitate first-mover advantages for such young firms entering foreign markets (Knight & Cavusgil, 1996). The study by Knight and Cavusgil (2004) shows that leveraging marketing competence from international distributors is critical to born-global or new venture international success. They note that knowledge-intensive and skillful foreign intermediaries can help perform a range of downstream marketing and other value-added activities that enhance new venture international performance. We therefore hypothesize that:

Hypothesis 2c: The positive relationship between innovativeness in international venturing and the performance advantage of newness in early internationalization is mediated by network capability upgrading.

METHODOLOGY

Operational Consideration of INVs

Most studies on INVs have focused on exporting as a form of internationalization. The literature generally takes the position that export sales in multiple countries involve a firm's commitment and allocation of production capacity to a set of international targets (Fan & Phan, 2007). To gauge a meaningful level of involvement with international business activity (as opposed to conducting sporadic business overseas), scholars have used certain export criteria to refine INVs.

Although there are some variations on specific quantitative criteria around export activities, much of the literature has regarded INVs as young and small firms that derive at least 5–25% of their total sales from international markets within 3 years of inception (Fan & Phan, 2007; Knight & Cavusgil, 2004; Madsen et al., 2000). Consistent with the literature, our survey of INVs met the size, age and export criteria. In particular, we confined our selection criteria to small and medium-sized privately owned firms, founded in 1990 or later, and generating at least 20% of their total sales from multiple countries within 3 years of start-up. This enabled us to focus primarily on the early stages of INVs, and address issues related to LAN and its performance implications.

The Emerging-Economy Context

It has been recognized that there is a significant lack of knowledge surrounding INVs in emerging economies (Rialp et al., 2005; Yamakawa et al., 2008). Almost all the empirical evidence has so far been obtained from new ventures based in more advanced economies. Emphasis should therefore be given to generalizing the results found so far among samples of, basically, technology-oriented firms to a wider spectrum of industries, and particularly to young international firms in emerging economies (Yamakawa et al., 2008).

Academic research has explored the subject of internationalization in emerging-market firms with enthusiasm (Elango & Pattnaik, 2007; Luo & Tung, 2007; Yiu et al., 2007; Zhou, Wu, & Luo, 2007), but there is relatively little research on the phenomenon of younger and entrepreneurial international firms from such markets. Yamakawa et al. (2008: 60) point out that

> If research on entrepreneurship and internationalization is to keep up with practice, it seems imperative that at least some of our attention be devoted to these cutting-edge

cross-border entrepreneurial activities moving from EE (emerging economies) to DE (developed economies).

In response, our investigation focuses on INVs in China, the world's largest and fastest-growing emerging market. Given that most new ventures from emerging markets lack key resources and capabilities, Yiu et al. (2007) argue that the need to overcome such deficiencies may lie in the act of entrepreneurship. In their view, the entrepreneur is a key to acquiring the capabilities, knowledge and experience necessary for successful international venturing. Luo and Tung (2007) maintain that emerging-market firms often have to embrace a series of aggressive and calculated risk-taking measures for leveraging international expansion in order to compensate for their competitive disadvantages in the global arena. Indeed, such entrepreneurial orientation is necessary for new ventures from emerging economies for providing vitality and market orientation (Yamakawa et al., 2008; Yiu et al., 2007). The context of our research therefore has both theoretical and practical implications for advancing our understanding of INVs.

Sample and Data Collection

The data for this study were collected over a 2-year period through an interviewer-administered questionnaire survey with executives who held responsibilities for exporting or international activity in their firms. The sample consisted of 436 young internationalizing small and medium-sized Chinese firms that met the selection criteria outlined earlier. A stratified sample of 1800 firms from the *Kompass China Trade Directory* were initially approached and asked to participate in the exercise. The sample covered most of the economically developed provinces and regions in China, including Guangdong, Zhejiang and Jiangsu. Of these, Guangdong and Zhejiang are leading players in China's exports, and together accounted for almost 50% of total national exports in 2006 (Ministry of Commerce of China, 2006).

We hired a local research coordinator from a major university within each geographic region. The coordinators helped us first send out letters to the executives of these young internationalizing firms, explaining the purpose of the study and inviting their participation. The firms that agreed to participate in the survey were then contacted further. Except for two locations where a research company was commissioned to help us conduct the survey, a team of trained graduate business students were employed in every other geographic location, and collected data by administering a standard questionnaire on-site.

To ensure data validity, shortly after the respondents had completed the main survey a random sample of follow-up telephone interviews was conducted (by one of the authors) with 15 respondents in each region. The respondents were asked a series of selected questions (regarding their firms' international venturing performance and entrepreneurial orientation) that had been used in the main research instrument. The post-survey data were fairly consistent with the original data, with Pearson correlation coefficients ranging from 0.82 to 0.93. This procedure was considered useful for further validating the views of those Chinese managers sampled (Peng & Luo, 2000).

We also controlled methodologically for potential common method variance resulting from using a single informant. We employed "filtering" questions to separate psychologically the measures of the predictor and criterion variables involved in the questionnaire (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The filtering questions included a set of seemingly relevant items pertaining to managers' perceptions of social capital involved within Chinese enterprises, and were positioned in the questionnaire to separate the flow of questions relating to the measures of entrepreneurial proclivity, capability upgrading and international sales performance. Each interviewer was also instructed to provide a "temporal" separation of the measurement of the predictor and criterion variables through a courtesy interruption, wherever appropriate during the process of data collection, by serving refreshments.

According to Podsakoff et al. (2003), the creation of a psychological or temporal separation can diminish the respondent's ability and motivation to use his or her prior responses to answer subsequent questions, thus reducing common method bias. Statistically, the data were also tested for the existence of common method bias by using Harman's one-factor approach (Podsakoff & Organ, 1986). Common methods concern is high if a single factor can be extracted that explains the majority of the variance for the data. We subjected all the key measures (detailed as follows) to a confirmatory factor analysis, and found that the Harman's one-factor model demonstrated a poor fit to the data. As a result, common methods bias was ruled out as being a potential threat to the subsequent hypothesis testing.

Among the responses, most of the firms were textile, garment, footwear or accessory manufacturers. The rest came from diverse sectors, including toys and crafts, hardware and electronic appliances, and machinery equipment. The firms had a median annual sales turnover ranging from 5 to 10 million RMB. The sample profile of firms tended to represent typical Chinese exporting firms in terms of the industrial sectors covered, with each firm receiving export orders from multiple overseas markets. There were no significant differences between responding firms and non-responding firms in terms of firm size and age. Table 1 presents key characteristics of the sample used in this study.

Measures

International entrepreneurial proclivity. Previously validated scales were adapted for the three dimensions of entrepreneurial proclivity (proactiveness, risk-taking and innovativeness). These represent several commonly used items for the construct of entrepreneurial proclivity, as previously used by Lumpkin and Dess (1996). Based on such sources, Knight and Cavusgil (2004) created an eight-item scale for international entrepreneurial proclivity.

Table 1 Organizational characteristics of the sample (N=436)

	Mean	*s.d.*	*Range*
Firm age (years in business)	8.41	3.87	1–16
Number of employees	156	135.04	30–500
	Median		*Range*
Annual turnover (million RMB)	5–10		1–50
	% firms		
Firm ownership			
Privately owned	67		
Stock sharing	10		
Joint ventures	19		
Others	4		
Number of overseas markets			
1–3	50.7		
4–6	24.8		
7–9	9.9		
10 and over	14.6		
Type of industry			
Textiles and garments	65.5		
Toys and crafts	9.4		
Hardware and electronics	12.6		
Chemicals	9.4		
Others	3.1		

Following these efforts, some additional items were added and others were refined to derive a more comprehensive measure (14 items, with seven-point Likert scales anchored by 1="strongly disagree" and 7="strongly agree") to operationalize the three dimensional domains of the construct. As expected, the results of an exploratory factor analysis generated three factors, of which five items loaded on one single factor relating to the receptiveness to innovation (α=0.83); four items loaded on a second, relating to risk-taking attitudes toward overseas markets (α=0.74); and five items loaded on a third factor describing proactiveness to foreign market opportunities (α=0.82). These dimensions were therefore kept separate in the subsequent analyses.

Knowledge capability upgrading. The notion of knowledge capability upgrading is manifested in terms of learning and acquiring new knowledge (Luo, 2000). Thus we refined an established foreign market knowledge scale to operationalize the construct of knowledge capability upgrading. Eleven items were adapted from previous work (Autio et al., 2000; Hadley & Wilson, 2003) to measure a new venture's knowledge capacity (within 3 years of start-up): foreign institutional knowledge, foreign business knowledge and internationalization knowledge (Eriksson, Johanson, Majkgard, & Sharma, 1997). The scale items were refined by the managers' perceptions relative to those of the firm's relevant competitors, because of the competitive nature of LAN. Each of the multiple items was measured using seven-point scales anchored by 1="much worse" and 7="much better".

In considering the possible vagueness of the three dimensions of the knowledge capacity construct (Hadley & Wilson, 2003), a further exploratory factor analysis was undertaken using all the items, and this yielded one single factor (variance explained=65.59%). This unidimensional factorial structure suggests that the operational items may converge to a common construct. The reliability of the measures for the construct was shown by a high coefficient alpha (α=0.95). The knowledge capability upgrading scale was aggregated by averaging the multiple items for subsequent hypothesis testing.

Network capability upgrading. The notion of network capability upgrading can be accessed from process, structure or dynamic perspectives (Coviello, 2006). In this study we followed a common practice by focusing on the extensiveness of utilizing

relationship networks (Peng & Luo, 2000). It is recognized that young internationalizing firms may upgrade relationship networks with both domestic and foreign entities (Harris & Wheeler, 2005). Although establishing relationships with foreign clients is more challenging because of social and geographic distance, several studies indicate that foreign networks are used more often for cross-border activities and trade, particularly among young internationalizing firms (Cavusgil & Zou, 1994; Freeman, Edwards, & Schroder, 2006; Styles & Ambler, 1994). It was therefore decided to focus on the utilization of foreign networks in this study.

This was achieved by adapting a three-item, seven-point Likert scale (1="strongly disagree" to 7="strongly agree") from the work of Peng and Luo (2000) to assess the extent to which the respondent firm had utilized personal ties, networks and connections with foreign suppliers, distributors or customers in the early stages of international venturing (within 3 years of start-up). The three items (α=0.86) used in this study represent the manager's agreement concerning the extent to which:

(1) their firm had established new networks in foreign markets;
(2) they had social interactions with foreign clients; and
(3) their firm had developed cooperative relationships with foreign business partners.

International performance of newness. Relevant to LAN and performance implications, Sapienza et al. (2006) point out that international growth and survival are two conceptually distinct outcomes relating to new international ventures. In recognizing the theoretical importance of differentiating the growth and survival aspects of organizational performance, international sales growth (ISG) represents the key dependent variable in this study. Following Autio et al. (2000) and others (e.g., Preece, Miles, & Baetz, 1999; Yip, Gomez-Biscarri, & Monti, 2000), ISG is measured using international sales as a percentage of the firm's total sales. This indicator shows how rapidly the internationalizing firm evolves to grow and succeed through international expansion. Given that the central focus of this study is on what learning advantages new venture firms acquire within 3 years of start-up for enhancing the possibility of international growth, and on how they acquire them, ISG is reflective of the performance implications of LAN.

Because of the difficulty associated with acquiring objective data from privately held firms in China (Brouthers & Xu, 2002), a self-report measure was used. Prior research suggested that, in the absence of archival data, self-report measures are acceptable, provided that care is taken to obtain data from reliable informants (Peng & Luo, 2000). Following a similar approach used by previous researchers (Matsuno et al., 2002) with a consideration of the competitive nature of LAN, respondents were asked how they rated their firm's ISG compared with their major competitors (1="much worse" to 7="much better") within 3 years of start-up.

Control variables. In their theoretical arguments on the LAN effect, scholars (Sapienza et al., 2006; Zahra et al., 2006) have emphasized the importance of boundaries and control for critical factors that might influence the outcomes of internationalization. Several key variables that have been highlighted in the literature were used as control variables. They were:

- *firm size* (operationalized as sales turnover);
- *international experience* (number of years since first exporting/being involved in international activity);
- *technology dynamics* (change in technology relating to the firm's main product/industry, 1="very slow" to 7="very rapid");
- *market uncertainty* (vulnerability to the change in trade policies across borders, 1="extremely low" to 7="extremely high"); and
- *product price* in international markets (competitive advantage of the firm's product price in relation to major competitors in the international markets, 1="not at all competitive" to 7="very competitive").

In addition, we also controlled for *firm age at internationalization* (1="within 1 year since inception", 2="within 2 …" and 3="within 3 …").

These variables reflect both organizational and foreign market characteristics that are conceptually related to organizational learning and capability development – thus underlying the international growth and survival of INVs (Sapienza et al., 2006). They were also considered useful for providing a more valid examination of the proposed research hypotheses in this study.

ANALYSES AND RESULTS

Measurement Validity and Reliability

The means, standard deviations and correlations between variables in our model are presented in Table 2.

In accordance with accepted practice (Anderson & Gerbing, 1988; Fornell & Larcker, 1981), we assessed the properties of measurement scales for convergent and discriminant validity, unidimensionality, and construct composite reliability (CR). The three-factor measurement model of entrepreneurial proclivity provided a good overall fit with the data (χ^2=145.66, df=50; NNFI=0.95; CFI=0.96; RMSEA=0.067). As further evidence of convergent validity, all standardized factor loadings were large and highly significant (*t*-values ranging from 12.21 to 15.57). The average variance extracted (AVE) for the proactiveness, risk-taking and innovativeness dimensions of entrepreneurial proclivity were 0.58, 0.58 and 0.53, respectively, all exceeding the benchmark of 0.50 for convergent validity (Fornell & Larcker, 1981). Discriminant validity is established if the AVE is larger than the squared multiple correlation coefficients between factors (Fornell & Larcker, 1981). Our results demonstrate that this criterion was met across all pairs of the three dimensions of entrepreneurial proclivity, thus lending strong support to discriminant validity. A second more stringent test of discriminant validity was also conducted, which consisted of a series of χ^2 tests between two models: one in which the correlation between two constructs was freely estimated, and the other where the correlation was fixed at 1.0. A χ^2 difference greater than 3.84 (α=0.05) would suggest that the two constructs are statistically different. In all cases, the model with the free parameter was found to be superior, providing strong evidence of the discriminant validity for the three subconstructs of entrepreneurial proclivity.

The other key constructs, such as knowledge capability upgrading and network capability upgrading, were also rigorously examined in terms of their measurement properties. Table 3 lists the measurement items of the construct scales, standardized coefficient loadings of the confirmatory factor analysis results, construct CR and AVE for each multi-item construct in our research model. In general, the measurement scales used in this study were found to be reliable and valid.

Table 2 Means, standard deviations and partial correlation coefficients (*N*=436)

Construct	*Mean*	*s.d.*	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
(1) International performance of newness (ISG)	4.65	1.334	1.00											
(2) Knowledge capability upgrading (KCU)	4.66	1.101	0.461**	1.00										
(3) Network capability upgrading (NCU)	4.31	1.457	0.304**	0.420**	1.00									
(4) Proactiveness	4.71	1.178	0.348**	0.504**	0.441**	1.00								
(5) Risk-taking	4.85	0.940	0.345**	0.588**	0.266**	0.633**	1.00							
(6) Innovativeness	5.27	1.053	0.270**	0.528**	0.284**	0.635**	0.722**	1.00						
(7) Firm size	5.12	2.564	0.248**	0.178**	0.279**	0.318**	0.019	0.027	1.00					
(8) Age at internationalization	1.67	1.165	0.124*	0.088	0.049	0.118*	0.092	0.113*	0.006	1.00				
(9) Firm international experience	5.29	3.507	0.056	0.110**	0.150**	0.125**	−0.018	−0.034	0.343**	−0.043	1.00			
(10) Technology dynamics	4.73	1.477	0.151**	0.224**	0.058	0.098*	0.306**	0.241**	−0.123*	0.092	−0.034	1.00		
(11) Market uncertainty	4.71	1.300	0.056	0.179**	−0.015	0.144**	0.298**	0.286**	−0.108*	0.007	−0.097*	0.291**	1.00	
(12) Competitive price	4.77	1.227	0.421**	0.416**	0.204**	0.284**	0.417**	0.335**	0.084	0.110	0.003	0.152**	0.118*	1.00

*$p<0.05$; **$p<0.00$.

Table 3 Measurement scales and properties

Constructs/Items	*Standardized loadings*	*CR*	*AVE*
International entrepreneurial proclivity			
(*Sources*: Covin & Slevin, 1989; Knight & Cavusgil, 2004; Lumpkin & Dess, 1996)			
Seven-point Likert scale: 1=strongly disagree; 7=strongly agree.			
Proactiveness		0.88	0.58
1. Our top managers have regularly attended local/foreign trade fairs.	0.657		
2. Our top managers have usually spent some time abroad to visit.	0.756		
3. Our top management actively seeks contact with suppliers or clients in international markets.	0.810		
4. Our top management regularly monitors the trend of export markets.	0.737		
5. Our top management actively explores business opportunities abroad.	0.818		
Risk-taking		0.85	0.58
6. Our top management focuses more on opportunities than risks abroad.	0.771		
7. When confronted with decisions about exporting or other international operations, our top management is always tolerant to potential risks.	0.723		
8. Our top managers have shared vision towards the risks of foreign markets.	0.764		
9. Our top management values risk-taking opportunities abroad.	0.780		
Innovativeness		0.76	0.53
10. Our top management always encourages new product ideas for international markets.	0.766		
11. Our top management is very receptive to innovative ways of exploiting international market opportunities.	0.748		
12. Our top management believes the opportunity of international markets is greater than that of the domestic market.[a]		0.76	
13. Our top management continuously searches for new export markets.	0.663		
14. Our top management is willing to consider new suppliers/clients abroad.[a]			
Knowledge capability upgrading		0.94	0.59
(*Sources*: Autio et al., 2000; Eriksson et al., 1997; Hadley & Wilson, 2003)			
The scale is based on own firm rating relative to main competitors: 1=much worse than main competitors; 7=much better than main competitors.			
Foreign institutional knowledge			
1. Our top managers' knowledge about foreign language and norms.	0.715		
2. Our top managers' knowledge about foreign business laws and regulations.	0.756		
3. Our top managers' knowledge about host government agencies.	0.764		
Foreign business knowledge			
4. Our top managers' knowledge about foreign competitors.	0.772		
5. Our top managers' knowledge about the needs of foreign clients/customers.	0.786		
6. Our top managers' knowledge about foreign distribution channels.	0.747		
7. Our top managers' knowledge about effective marketing in foreign markets.	0.816		
Internationalization knowledge			
8. Our top managers' international business experience.	0.821		
9. Our top managers' ability in determining foreign business opportunities.	0.737		
10. Our top managers' experience in dealing with foreign business contacts.	0.739		
11. Our top managers' capability for managing export business or other international operations.	0.711		
Network capability upgrading		0.97	0.76
(*Source*: Peng & Luo, 2000)			
Seven-point Likert scale: 1=strongly disagree; 7=strongly agree			

Table 3 *Continued*

Constructs/Items	*Standardized loadings*	*CR*	*AVE*
1. Our firm has established new networks in foreign markets.	1.00		
2. Our firm has developed cooperative relationships with foreign business partners.	0.715		
3. Our senior managers have social interactions with foreign clients.[a]			
International performance of newness (*Sources*: Autio et al., 2000; Preece et al., 1999; Yip et al., 2000)			
International sales growth The scale is based on own firm rating relative to main competitors: 1=much worse than main competitors; 7=much better than main competitors.	1.00		

[a]Indicates item that was dropped in the scale purification process.
All standardized coefficient loadings are significant at $p<0.01$.
CR=Construct composite reliability; AVE=Average variance extracted for each multi-item construct in the research model.

Tests of Hypotheses with Structural Equation Modeling (SEM)

According to Kenny and colleagues, a mediation effect is established when

(1) there is a relation between the predictor and the outcome;
(2) the predictor is related to the mediator;
(3) the mediator is related to the outcome variable; and
(4) the strength of the relation between the predictor and the outcome is significantly reduced when the mediator is added to the model (Baron & Kenny, 1986; Kenny, Kashy, & Bolger, 1998).

Although multiple regression has traditionally been used for testing the effects of mediation, in more recent years the SEM approach has been used as a preferred method (Brown, 1997; Mackinnon, Lockwood, Hoffman, West, & Sheets, 2002), as it can control for measurement error, provides information on the overall goodness-of-fit relating to the hypothesized model and is also more flexible than regression for testing multiple mediators. SEM was therefore adopted for analyzing the data and verifying the hypotheses posited. SEM has the ability to assess a variety of relationships comprehensively and holistically, and is a tried and tested approach for managing multiple constructs simultaneously (Brown, 1997).

As outlined by Holmbeck (1997) and others (e.g., Mackinnon et al., 2002), the logic behind testing for mediation using SEM resembles that of mediated regression analysis. The procedure described by Holmbeck was followed, whereby the significance of the mediation was tested by comparing the fit for the direct effect model with that of the predictor–mediator–outcome model (with and without the direct path from the predictor and the outcome constrained to zero). A full mediation effect is supported if the former model (with the direct path between the predictor and outcome) does not provide a better fit to the data than the latter.

Hypothesis Testing

The hypotheses were tested using AMOS (version 17.0). To reduce parameter estimates relative to the sample size, we averaged the items to form a composite score indicator for each of the three subconstructs of entrepreneurial proclivity and the capability-based international market knowledge construct. Given the three items used to measure the network capability upgrading construct, we decided to retain multiple indicators in the SEM model estimation. International performance of newness was operationalized with a single indicator of ISG.

Table 4 summarizes the results of the mediation tests. M1 is a direct effect model, where the three subconstructs of entrepreneurial proclivity and the two mediators (knowledge capability upgrading and network capability upgrading) are directly linked to international performance of newness, measured by ISG. The fit indices of the direct effect model (M1) signal a somewhat poor overall fit (χ^2=345.63, df=12; NNFI=0.41; CFI=0.75; RMSEA =0.255). M2 presents data for a partially mediated model, whereby the three subconstructs of entrepreneurial proclivity are linked to network capability upgrading, which in turn is related to the performance measure of ISG. Similarly to M1,

Table 4 Hypothesis test of alternative models

Model and structure	χ^2	*df*	$\Delta\chi^2$	*CFI*	*NNFI*	*RMSEA*
M1: direct effect model Nonmediated	345.63	12	–	0.75	0.41	0.255
M2: M1+IEP→NCU Partially mediated model	260.03	9	85.60	0.81	0.41	0.256
M3: M2+IEP→KCU Partially mediated model	54.80	6	205.23	0.96	0.83	0.138
M4: M3+NCU→KCU Full, partially mediated model	25.12	5	29.68	0.98	0.93	0.089
M5: direct paths=zero Complete mediation model	34.92	8	9.80	0.98	0.92	0.097

CFI=comparative fit index; NNFI=Bentler non-normed fit index; RMSEA=root mean square error of approximation; IEP=international entrepreneurial proclivity (proactiveness, risk-taking and innovativeness); NCU=network capability upgrading; KCU=knowledge capability upgrading.
Model specification: M1 (direct effect model), where the three predictors of IEP and the two mediators (KCU and NCU) are directly linked to the outcome of international sales growth (ISG). M2 (mediating paths through NCU), where the three predictors of IEP are linked to NCU. M3 (mediating paths through KCU), where the three predictors of IEP are linked to KCU. M4, full, partially mediated model, where the additional mediating path from NCU to KCU is added to M3. M5 is a complete mediation model, where the direct links between the three predictors of IEP and ISG are constrained to zero from M4.

the model fit indices indicate a poor fit (χ^2=260.03, df=9; NNFI=0.41; CFI=0.81; RMSEA=0.256).

In M3, the mediating role of knowledge capability upgrading was specified, whereby the link from the three subconstructs of entrepreneurial proclivity to knowledge capability and ISG was added to M2. The findings again reveal a poor model fit (χ^2=54.80, df=6; NNFI=0.83; CFI=0.96; RMSEA=0.138). M4 represents a full, partially mediated model, whereby the additional mediating path from network capability upgrading to knowledge capability upgrading was added to M3. Compared with the previous three models, the overall fit indices of M4 are acceptable and much improved (χ^2=25.12, df=5; NNFI=0.93; CFI=0.98; RMSEA=0.089).

Model M4 included both the direct path from the three subconstructs of entrepreneurial proclivity to ISG and the two mediators (knowledge capability upgrading and network capability upgrading). Finally, a complete mediation model (M5) was estimated, where from M4 the direct paths between the three subconstructs of entrepreneurial proclivity and ISG were each constrained to zero. The findings reveal that the fit indices for model M5 were acceptable (χ^2=34.92, df=8; NNFI=0.92; CFI=0.98; RMSEA=0.097).

The chi-square difference between models M4 and M5 ($\Delta\chi^2$=9.80, df=3) suggests that model M4 is slightly better than Model 5, based on the critical chi-square value of 7.82, $p<0.05$. Despite this, we also see that Model 5 may be preferred, since it is more parsimonious than Model 4. In fact, the acceptance of Model 5 would provide stronger support for our mediation hypotheses, as it is a complete mediation model (without direct paths). Nevertheless, by taking into account our further testing, and particularly a direct, significant link between the proactiveness dimension of entrepreneurial proclivity and ISG (see Figure 2), we concluded that it would be more conservative to stick with Model 4 as the baseline model for further assessment of the hypotheses.

Figure 2 illustrates the parameter estimates for model M4 (full, partial mediation). Hypotheses 1a–c state that knowledge capability upgrading mediates

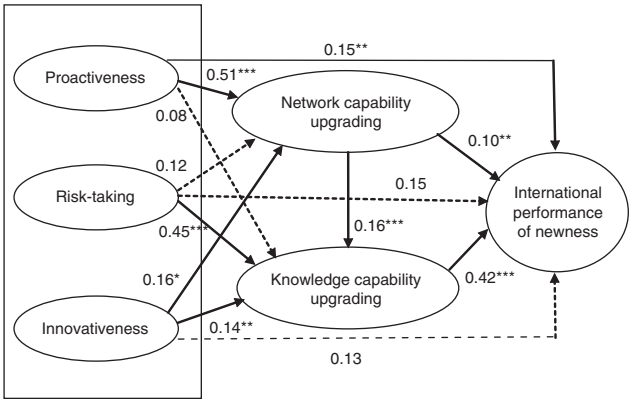

Figure 2 Results of structural equation modeling (SEM) on the hypothesized model (M4).
The solid lines represent significant linkages; the dotted lines represent non-significant linkages. The model estimates are obtained from M4 (the tested model).
*$p<0.10$; **$p<0.05$; ***$p<0.01$.

the impact of entrepreneurial proactiveness, risk-taking and innovativeness, respectively, on the performance advantage of newness in INVs. As demonstrated here, the paths from entrepreneurial proclivity to knowledge capability upgrading are significant for both risk-taking (β=0.45, $p<0.01$) and innovativeness (β=0.14, $p<0.05$), but not for proactiveness. The path from knowledge capability upgrading to ISG is also significant (β=0.42, $p<0.01$). Based on the alternative model comparisons (Table 4) and the significance of structural coefficient estimates, we therefore concluded that Hypotheses 1b and 1c are largely supported.

Hypotheses 2a–2c posit an alternative mediating path pertaining to the impact of the various dimensions of entrepreneurial proclivity on the performance advantage of newness through network capability upgrading. As illustrated in Figure 2, because the coefficient paths from proactiveness to network capability upgrading (β=0.51, $p<0.01$) and from network capability upgrading to ISG (β=0.10, $p<0.05$) are statistically significant, there is some support for Hypothesis 2a in conjunction with the proactiveness of entrepreneurial proclivity.

Furthermore, the findings also demonstrate a statistically significant link from network capability upgrading to knowledge capability upgrading (β=0.16, $p<0.01$). This suggests that the mediating effect of network-based capability upgrading on the performance advantage of newness in INVs is partially channeled through knowledge capability upgrading. In other words, network capability upgrading can contribute positively to the enhancement of knowledge capacity, which in turn leads to LAN-related performance advantage. As Figure 2 represents a partially mediating model, with direct paths from entrepreneurial proclivity to ISG, it can be seen that the direct pathway from the proactiveness dimension is also statistically significant (β=0.15, $p<0.05$).

Rival Models

Several rival models were also compared. First, and in order to assess the effects of changing the ordering of the constructs, it was decided to run alternative models that were not nested with the baseline model (M4). In this case, the capability-upgrading measures were posited as exogenous variables, with the subconstructs of entrepreneurial proclivity serving as mediators for attaining ISG. The resulting model had a very poor fit with the data (χ^2=418.53, df=10, CFI=0.69, NNFI=0.13, RMSEA=0.310).

Furthermore, a moderation model was specified whereby network capability upgrading was posited to moderate (not mediate) the relationship between each of the three dimensions of entrepreneurial proclivity and knowledge capability upgrading. Using the median value of the measures for network capability upgrading, the sample was separated into two subgroups, and then the model specifying the links from the three dimensions of entrepreneurial proclivity to knowledge capability upgrading and ISG was assessed through multiple-sample analysis. Although the model did appear to have a good fit with the data across the two groups of relationship networks (χ^2=13.41, df=6, CFI=0.98, NNFI=0.93, RMSEA=0.076), a subsequent examination of the fit indices and path coefficients for each model condition showed little variation between the two groups. We also ran a constrained model in which the path coefficients between the various dimensions of entrepreneurial proclivity and knowledge capability upgrading were set to be equal between the two groups. As indicated by a chi-square difference test, the constrained model was not significantly different from its unconstrained model. As a result, the data did not provide evidence for network capability upgrading having a moderating effect on the relationship between entrepreneurial proclivity and knowledge capability upgrading.

Age at Internationalization

Although the premise of LAN suggests that age at internationalization is a critical variable, its effect on LAN advantages remains controversial (Zahra, 2005). In order to account for this, the baseline model was further tested by including firm age at internationalization. From a theoretical standpoint, we treated age at internationalization as a moderating variable. Table 5 summarizes the results using multiple-group analyses based on age at internationalization: within 1 year after start-up, within 2 years and within 3 years. The overall fit indices (χ^2=38.20, df=15, CFI=0.98, NNFI=0.90, RMSEA=0.06) suggest that the baseline model fits the data well across all three age groups of INVs.

In order to further test the equivalence of the coefficients of the paths across the three groups, the baseline model was compared with a series of nested models with the relevant coefficients constrained as equal across the three groups. The differences between the chi-squares were not significant for the baseline model (M4) compared with the constrained models (M4_1 – M4_6). The

Table 5 Multiple-group analysis by firm age at internationalization

Model and structure	χ^2	*df*	$\Delta\chi^2$	*CFI*	*NNFI*	*RMSEA*
M4: Tested model (baseline structure)	25.12	5	—	0.98	0.93	0.089
Multiple-group model analysis						
M4: no parameter constraints						
Three-groups model structure	38.20	15	—	0.98	0.90	0.060
M4_1: IEP–NCU link equal	44.14	21	5.94	0.98	0.93	0.051
M4_2: IEP–KCU link equal	40.08	21	1.88	0.98	0.94	0.046
M4_3: NCU–KCU link equal	39.94	17	1.74	0.98	0.91	0.056
M4_4: NCU–ISG link equal	38.26	17	0.06	0.98	0.92	0.054
M4_5: KCU–ISG link equal	40.01	17	1.81	0.98	0.91	0.056
M4_6: IEP–ISG link equal	48.02	21	9.82	0.98	0.92	0.055

In M4_1, the links between the three predictors of international entrepreneurial proclivity (IEP) and network capability upgrading (NCU) are constrained to be equal across the three groups. In M4_2, the links between the three predictors of international entrepreneurial proclivity (IEP) and knowledge capability upgrading (KCU) are constrained to be equal across the three groups. In M4_3, the link between network capability upgrading (NCU) and knowledge capability upgrading (KCU) is constrained to be equal across the three groups. In the remaining models, the direct links are constrained to be equal, respectively, across the three groups of ages at internationalization.

findings suggest that the baseline model structure held among the young international venturing firms. Age at internationalization therefore did not register a significant impact on the relationships between the variables under investigation. The results might be attributed to the fact that all the firms in this study were relatively young international ventures – that is, typically involved in international activities within 3 years of being established. One might argue that new ventures that internationalize at similar ages may not necessarily have the same LAN and performance outcomes. Here, we demonstrated that firm-specific entrepreneurial dynamics of learning matters the most for LAN-related performance in the early stages of international venturing.

Boundary Conditions of the Baseline Model

To illustrate some of the boundary conditions of the tested baseline model, we included several control variables in the model estimation: firm size, firm international experience, technology dynamics, market uncertainty and competitive price in international markets. Except for firm size and competitive price factors, the other control variables were not significantly related to the dependent measure of international performance of newness. It seems that, during the early stages of international venturing, most of these new ventures might be facing similar challenges (i.e., market uncertainties) from the external market environments. This might explain why some of these control variables were not significant in our study.

Relating to the significance of firm size and competitive price, we conducted additional tests by treating them as moderating variables. Theoretically, it can be argued that: (1) firm size moderates the link between entrepreneurial proclivity and capability upgrading; and (2) price advantage moderates the link between capability upgrading and the performance of newness. It makes sense that, for larger firms, entrepreneurial proclivity may be more strongly and positively related to capability upgrading because of their greater resources. Likewise, for firms with greater cost or price competitive advantages, their relationship networks and market knowledge may contribute more to ISG thanks to other complementary or synergistic effects.

To test these possible moderating effects, the sample was divided into two subgroups, using the median values. Multiple-group analysis was then performed, based on firm size and competitive price. Table 6 summarizes the results relating to the fit indices for the respective models. The overall fit indices for the multiple-sample analysis by firm size demonstrate that the baseline model (M4) fits the data well (χ^2=16.57, df=10, CFI=0.99, NNFI=0.96, RMSEA=0.045). Similar results were also obtained for new ventures with different price advantages (χ^2=32.26, df=10, CFI=0.98, NNFI=0.91, RMSEA=0.070).

We also followed the procedure by Anderson and Gerbing (1988) and conducted a series of nested model comparisons that involved the baseline model (M4) and its constrained alternatives (M4a – M4d) so that we could assess how firm size

Table 6 Multiple-group analysis by firm size and competitive product price factors (test for boundary conditions)

Model and structure	χ^2	*df*	$\Delta\chi^2$	*CFI*	*NNFI*	*RMSEA*
M4: Tested model (baseline structure)	25.12	5	—	0.98	0.93	0.089
(1) Multiple-group model analysis by firm size						
M4: no parameter constraints						
Two-groups model structure	16.57	10	—	0.99	0.96	0.045
M4a: IEP–NCU link equal	25.97	13	9.40	0.99	0.97	0.038
M4b: IEP–KCU link equal	21.33	13	4.76	0.99	0.96	0.045
(2) Multiple-group model analysis by competitive price						
M4: no parameter constraints						
Two-groups model structure	32.26	10	—	0.98	0.91	0.070
M4c: NCU–ISG link equal	35.31	11	3.05	0.98	0.92	0.066
M4d: KCU–ISG link equal	39.57	11	7.31	0.98	0.92	0.065

In M4a, the links between the three predictors of international entrepreneurial proclivity (IEP) and network capability upgrading (NCU) are constrained to be equal. In M4b, the links between the three predictors of international entrepreneurial proclivity (IEP) and knowledge capability upgrading (KCU) are constrained to be equal. In M4c, the link between network capability upgrading (NCU) and international sales growth (ISG) is constrained to be equal. In M4d, the link between knowledge capability upgrading (KCU) and international sales growth (ISG) is constrained to be equal. All of these multiple group analyses are drawn from the baseline model structure of M4 (the tested model; see Figure 2).

and the price factor moderate the various structural relationships in the baseline model. Based on significant chi-square difference tests between the baseline model and each of its constrained alternatives (in which relevant structural links were constrained to be equal in the multi-group analyses), our findings show that firm size moderates the relationship between entrepreneurial proclivity and network capability upgrading positively ($\Delta\chi^2$= 9.40, df=3, $p<0.05$), whereas the competitive price/cost factor moderates the relationship between knowledge capability upgrading and international performance of newness positively ($\Delta\chi^2$=7.31, df= 1, $p<0.01$). As a result, it may be concluded that, as part of the boundary conditions, the capability-upgrading mechanism underlying the LAN is more profound for larger new ventures, as well as for those with cost/price advantages in the international marketplace.

DISCUSSION AND CONCLUSION

Since the seminal work of Oviatt and McDougall (1994), the study of INVs has become increasingly significant in the international entrepreneurship arena. In recognizing that LAN presents theoretical arguments relating to the performance advantage of an INV's early and rapid internationalization, our theoretical model describes how the performance implications of LAN can be achieved through the mediating mechanisms of both knowledge and network capability upgrading at early stages of international venturing. We tested our theoretical arguments in the context of China's young INVs. The findings provide supporting evidence for the mediating effect of capability upgrading, particularly among larger new ventures and those operating with cost/price advantages in the international marketplace.

Research Implications

There are several implications that can be extracted from the findings of this investigation. First, the model proposed encourages entrepreneurs to recognize that learning advantages from early internationalization are unlikely to occur automatically. Rather, success tends to depend on appropriate senior management action in promoting a dynamic international learning environment, and particularly on their ability to work proactively when considering entry into international markets. This implies engaging effectively in export management, for example visiting international markets and trade fairs regularly, monitoring markets closely, and seeking out international opportunities. Management's ability to balance or minimize risk against such opportunities abroad is essential for success (Shrader et al., 2000), as is their market innovativeness, involving the development of new products and seeking innovative solutions to best serve international markets.

It therefore becomes apparent that the willingness of senior management to invest time in such proactive export behavior, and their ability to provide novel approaches for tackling export

markets, are needed in order to establish a series of international network partners who can not only transfer or pass on knowledge to key managers, but also leverage export sales in their own respected markets. In brief, the framework emphasizes that entrepreneurial behavior seems to shape its full potential for LAN advantages through the entrepreneur's dynamics of learning to upgrade a firm's network and market knowledge capabilities.

Given that many young and small venture firms from emerging economies have insufficient tangible resources to compete, this study demonstrates that they tend to excel through having a superior ability to leverage the entrepreneurial dynamics of learning to reach out successfully into overseas markets. Unlike mostly high-tech or knowledge-intensive orientated INVs in economically advanced countries (Autio et al., 2000), early movers from emerging markets may perhaps be more likely to rely on the entrepreneurial dynamics of learning to access value-creating resources and capabilities proactively, so as to overcome late-comer disadvantages and resource deficiencies. In general, our findings are able to further advance the theoretical arguments for supporting the performance implications of LAN advantages pertaining to early internationalization.

From a managerial standpoint, our research suggests that young INVs from China value entrepreneurial learning, because it relates to a rapid acquisition and absorption of new knowledge that plays a critical role in accounting for their successful international growth. In recognizing that this route of early internationalization is challenging (Sapienza et al., 2006), we argue that entrepreneurial actions aimed at upgrading knowledge and network capabilities may be essential for international entrepreneurs to balance or minimize the potential drawbacks of more aggressive and risk-taking behavior against growth opportunities abroad. Theoretically and empirically, our study does not find support for a direct link between entrepreneurial risk-taking and better performance in young international firms. Instead, we find that a more risk-taking (or risk-tolerant) orientation of entrepreneurial proclivity with regard to seeking out international opportunities leads to better knowledge resources and capabilities, which in turn drive the performance advantage of newness (see Figure 2).

This may be a reflection that young interna tional firms are willing to take on the risks involved, and manage them effectively, when entering international markets at an early stage of their life cycle. Prior research indicates that firms with a risk-tolerant orientation are more likely to encourage external learning through exploration and experimentation (Slater & Narver, 1995). As a result, for young INVs from emerging economies, successfully balancing risk against opportunities in international markets and promoting proactive entrepreneurial behavior necessitates the upgrading of knowledge and network capabilities, and through such entrepreneurial dynamics of learning, new ventures increase their possibility of growth in early internationalization. However, given that this study suffers from survival bias, it may be particularly important to further investigate to what extent such entrepreneurial sources of learning may give rise to the long-term competitive advantage of INVs (Sapienza et al., 2006).

Our findings add to the body of literature, and allow us to generalize further on existing research among samples of mainly high-technology-oriented enterprises to a broader spectrum of, particularly, young international firms in emerging economies. The research demonstrates that capability upgrading plays an instrumental role in ensuring success among INVs from China, and challenges senior managers, particularly in newly emerging economies, to seek and develop such new upgrading capabilities in order to benefit from early international venturing.

Limitations and Future Research

There are several limitations associated with this investigation. First and foremost, the measures used to assess knowledge and network capability upgrading may be inadequate, as it seems that a more comprehensive scale is required in order to best capture the rich meanings of these constructs. Second, although the dataset in this study has enabled us to examine the LAN phenomenon, we are unable to compare such new ventures with more experienced exporting firms. The findings are therefore limited in this respect. The subject of international entrepreneurial proclivity could, however, be further investigated by targeting samples of firms that are well established and experienced in international markets. Such research could help to shed further light on the discipline, and help in drawing comparisons.

Third, multi-item measures for control variables such as market uncertainty and technological dynamics, in addition to the dependent variable of performance, should be considered further in future research. For example, it would prove beneficial to discover whether such capability-upgrading

dimensions also have a positive bearing on other performance measures, such as profitability, return on investment and market share. The use of a single performance indicator (ISG) in this study, albeit reflective of key performance measures in this research domain, is undoubtedly limited to the scope of international market performance outcomes.

Future research could be undertaken in order to extend this framework by incorporating other constructs pertaining to LAN advantages. The theoretical development could also have been improved by adding constructs relating to the specific organizational advantages (structural, cognitive and positional) that underlie the LAN hypothesis (Autio et al., 2000; Sapienza et al., 2006). Through developing such constructs and measurement items in the context of emerging economies such as China, and in considering their effect on performance advantages, future research in this area has the potential to advance our knowledge of the subject and make significant contributions to the developing body of LAN literature.

The relevance of international entrepreneurial proclivity and, in particular, how it relates to the performance of early internationalization should be explored from a broader dynamic capabilities perspective of new venture internationalization (Sapienza et al., 2006; Zahra et al., 2006). The dynamics of entrepreneurial internationalization require multiple and integrated theories so that the emergent field of international entrepreneurship can be advanced (Mathews & Zander, 2007).

From a broader perspective, it is not unreasonable to argue that entrepreneurial proclivity may play different roles depending on the stage of international venturing. For example, at the early stage of international venturing here, entrepreneurial proclivity is posited as an initiating dynamic source of organizational learning for resource mobilization and reconfiguration, which is reflective of our conceptualization and sample. However, at later stages of international venturing, entrepreneurial proclivity could well play a moderating role for enhancing the benefits of established resources and capabilities. Unfortunately, given our sample of young INVs, our dataset does not allow us to investigate this further. This is another avenue for future research.

In addition to the general research direction, specific efforts are needed to strengthen and validate the proposed model, given the complexity of international markets and the changing dynamics associated with firms' international expansion plans (Luo, 2000). Although the findings suggest that larger new ventures, and firms operating with cost- or price-based advantages, increase the extent to which upgrading capabilities mediate the impact of entrepreneurial proclivity on LAN-related performance, future research should be devoted to exploring other key organizational and environmental factors (Zahra et al., 2006). It is likely that the upgrading capability model demonstrated here interacts with other organizational and environmental conditions to create a more complex pattern of effects on performance outcomes in early internationalization.

It may likewise also prove fruitful to extend this research in other rapidly emerging economies to provide further insights that will interest both the academic and practitioner communities. Other research designs, such as longitudinal data collection, would undoubtedly be useful for helping to explore further the critical factors pertaining not only to the growth aspect of international performance but also to the probability of firm survival during the course of internationalization (Sapienza et al., 2006). Moreover, it is acknowledged here that the retrospective nature of the data used in this study is an apparent limitation. The use of a longitudinal design is particularly encouraged in future research, as such an approach may help minimize potential retrospective bias, and could be useful for examining cause-and-effect relationships between variables.

Furthermore, although this study uses ISG as a dependent variable, which is consistent with the current literature (e.g., Autio et al., 2000), it may still suffer from survival bias, whereby unsuccessful firms are excluded. From a theoretical stance, while Sapienza et al. (2006) discuss the differential effects of LAN on INVs' survival and growth, it may therefore prove useful to advance the theoretical issues surrounding LAN and its performance implications by focusing on different domains of international performance, including growth and survival.

This study controlled for some key organizational and foreign market factors when testing the proposed hypotheses. Other factors relating to entrepreneurs' success profiles and prior international experiences (Lau, Shaffer, & Au, 2007; Sapienza et al., 2006; Zahra, 2005) and environmental changes and industry dynamics (Luo, 2003), which may provide a threat to the internal validity of the results, could also be considered in future studies. Certain boundary conditions relating to the model also need to be recognized. For example, although the use of data from China

(a major emerging economy) represents an important contribution to the international entrepreneurship research, the findings need to be considered with some caution, because they may not be generalizable to newer international firms from economically advanced countries.

Conclusion

This paper fills a gap in the under-researched area of literature surrounding INVs from emerging economies (Yamakawa et al., 2008). Theoretically, this study demonstrates how recent young international firms can leverage the entrepreneurial dynamics of learning to upgrade their knowledge and network capabilities for achieving growth opportunities from early internationalization. There are many theoretical arguments to support the importance of entrepreneurial behavior in INVs (Jones & Coviello, 2005; Mathews & Zander, 2007), but research detailing how the entrepreneurial dynamics of learning orientation relates to the performance implications of the LAN in INV internationalization remains underdeveloped (Sapienza et al., 2005; Zahra, 2005).

Given that early and rapid internationalization is viewed as an act of entrepreneurship (McDougall & Oviatt, 2000; Oviatt & McDougall, 1994), we argue that the conceptual framework of the entrepreneurial dynamics of learning may be imperative for developing the body of literature on new venture internationalization. In the emerging context of China, we see that our sample of young entrepreneurial firms achieve international sales success at great pace through their ability to develop international networks and absorb international market knowledge (acquire learning advantages) for facilitating such performance in a short period of time. In general, this study makes an important contribution to the LAN argument, and adds to the emergent international entrepreneurship literature.

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