



How do marketing, research and development capabilities, and degree of internationalization synergistically affect the innovation performance of small and medium-sized enterprises (SMEs)? A panel data study of Chinese SMEs



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ABSTRACT

This research examines how the marketing and research and development (R&D) capabilities as well as degree of internationalization influence the innovation performance of SMEs (small and medium-sized enterprises). SMEs are often considered the backbone of, and hence are of critical importance to, a large number of economies worldwide. A theoretical framework is developed by integrating insights from international new venture and marketing theory. We provide empirical evidence using panel data to test our models. The results indicate that internationalization has a positive effect on innovation performance when SMEs' R&D capability or marketing capability is high. Notably, however, we find that the effect of internationalization on innovation performance is negative when R&D capability or marketing capability is low. Moreover, the results show that marketing capability not only positively strengthens the effect of R&D capability on innovation performance, but critically also further strengthens the impact of internationalization on innovation performance.

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1. Introduction

"Because its purpose is to create a customer, the business enterprise has two – and only these two basic functions – marketing and innovation" (Drucker, 1993, p. 61).

Since barriers to international trade are eroded by advances in technology and improvements in means of transportation (Oviatt & McDougall, 1994; Ripolles & Blesa, 2012), internationalization is becoming a vital strategy for small and medium-sized enterprises (SMEs) to expand their business rapidly and to exploit new business opportunities on a global scale (Coviello & Munro, 1997; Leonidou & Katsikeas, 1996; Young, Wheeler, & Davies, 1989).

Studies on international new ventures (INVs), for instance, assert that small and young firms in high-tech industries benefit from the increased homogeneity of foreign markets and technological

innovation by trading upon competitive advantages based on a strong research and development (R&D) capability (Oviatt & McDougall, 1994) and learning advantages of newness (LAN) (Autio, Sapienza, & Almeida, 2000). R&D capability in particular has emerged as a central theme in the international new ventures and rapid internationalization literature and is seen as a strategically important source of competitive advantage (Filatotchev & Piesse, 2009; Golovko & Valentini, 2011; Knight & Cavusgil, 2004). Although prior research has contributed to our understanding of certain important factors, such as R&D capability and its impact on firm performance (e.g., Alexander & Satish, 2008; Kotabe, 1990; Mansfield, 1981), important questions remain regarding the effects of another key factor such as a firm's marketing capability that influences both internationalization and the innovation performance of firms (Ren, Eisingerich, & Tsai, 2015; Sheth & Parvartiyar, 1995).

Innovation is widely acknowledged as being important to the ability of SMEs to compete domestically and in the international arena but hard to manage effectively. In this research, we examine the specific role of marketing capability (vs. R&D capability) in driving a firm's innovation performance during the process of internationalization and to what extent, if at all, it influences the

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innovation performance of SMEs. Addressing this critical issue adds to our current knowledge on the success factors of SMEs in important ways and offers practical guidance to managers. Marketing capability refers to the integrative process in which a firm uses its tangible and intangibles resources to understand market needs, enables product differentiation, enhances customer cooperation (Prahalad & Ramaswamy, 2000), and achieves superior financial performance (Nath, Nachiappan, & Ramanathan, 2010). Identifying and unlocking new market opportunities internationally and exploiting accessible resources from inception of internationalization are key to the success of new ventures when competing in the global market space (Jones & Coviello, 2005; McDougall & Oviatt, 2000). It is therefore important to assess critically how the marketing capability of SMEs influences their ability to internationalize and their innovation performance.

Specifically, we focus on the study of SMEs as part of this research because they are frequently considered to act as the backbone and engine of numerous economies around the world (Chiao, Yang, & Yu, 2006). We theoretically argue that marketing capability has a critical role to play and answer the following key questions in our empirical tests. To what extent does marketing capability and internationalization effort synergistically affect the innovation performance of SMEs? Furthermore, how exactly does internationalization impact the innovation performance of SMEs? And, thirdly, to what extent do the effects of internationalization, marketing and R&D capabilities interact with each other to impact innovation performance? More specifically, the aim of this research is to address the question of how exactly internationalization impacts the innovation performance of SMEs and to examine the effects of marketing and R&D capabilities on the relationship between internationalization and innovation performance. We use panel data from listed Chinese SMEs to test our hypotheses.

This paper contributes to extent knowledge in several important and noticeable ways. First, given the rise of international new ventures, numerous empirical studies have addressed the importance of innovation capability on overseas performance of international new ventures (Filatotchev & Piesse, 2009; Golovko & Valentini, 2011; Knight & Cavusgil, 2004). However, little effort has been made to test and examine the reverse relationship between firms' internationalization and their innovation performance in detail. In other words, when does internationalization help or hinder a firm's innovation performance? Do the purported positive effects of internationalization in terms of greater firm innovativeness indeed materialize or does a firm's level of internationalization have no or perhaps even have a negative impact on its innovation performance?

This research contributes to the literature by answering these questions and by providing empirical evidence for the effects of internationalization on the innovation performance of SMEs. Second, we examine the direct and indirect effects of critical factors influencing the relationship between internationalization and innovation performance, thereby offering a more comprehensive picture of the role and importance of R&D versus marketing capability in SMEs' innovation performance in the context of their degree of internationalization.

Furthermore, in developing our arguments about the relationship between internationalization and innovation performance, we highlight the importance of marketing capability. Because international new ventures theory rarely discusses the importance of marketing capability on a firm's innovation performance, such examinations complement and extend current knowledge by broadening the scope of our understanding and international business research efforts.

The paper proceeds as follows. In the next section we discuss the literature and theory and propose a set of formal hypotheses to

be tested empirically. We then describe our sample and methodology and discuss the results of our empirical analysis. The final section provides a discussion of the findings, examines implications for practice, and points to critical avenues for future research.

2. Theoretical background and hypotheses

This study focuses on small and medium-sized firms from China and seeks to examine the relationships between the marketing capability, R&D capability and degree of internationalization, as well as the interactions among these. The rationale for choosing this set of factors examining the internationalization of SMEs from China is as follows: First, a large number of new international new ventures from newly developed emerging markets, such as South Korea, Taiwan, India, and Brazil, operate in the technology sector, where R&D capability and innovation performance play an important role in driving firm success (Filatotchev & Piesse, 2009; Golovko & Valentini, 2011; Knight & Cavusgil, 2004; Tsai & Eisingerich, 2010). Moreover, the organizational learning literature convincingly argues that because firms increasingly face the challenges of globalization and changes in technology, it is vital for a firm's competitiveness to own certain capabilities, such as R&D and innovation capability, that help a firm adapt and compete more effectively (Selnes & Sallis, 2003). In addition to this, it has been noted that the most value-added components of any technology value chain, which also yield the highest profit margins, are not only R&D but also marketing (Tsai & Eisingerich, 2010).

As indicated by prior research, the extent of marketing capability can significantly affect the internationalization strategies of firms in that industry (Kotabe & Helsen, 2004). Thus, marketing is also an important component to assess when examining the success of SMEs in their efforts to enter and compete in global markets. To some degree, it seems highly plausible that marketing has a vital role to play for SMEs given that the development and commercialization of new products and services is informed by firms' marketing efforts. Specifically, marketing can help firms obtain vital intelligence on customers, competitors, and market trends in general (Shah, Rust, Parasuraman, Staelin, & Day, 2006). Indeed, a primary role of marketing is help focus the attention of a firm and its members on maximizing value from customer relationships and generating revenue streams from existing and new customers, which are often critical elements of a firm's innovation efforts (Rust, Lemon, & Zeithaml, 2004). One of the primary roles of marketing is to act as the voice of consumers. In doing so, marketing offers a firm critical intelligence regarding the potential success of various innovation efforts. Because firms are affected by consumer and competitor action (Jaworski & Kohli, 1993), firms may be better able to pick up and trade upon new opportunities when firms' marketing capability is high (vs. low). On the basis that marketing has an important informational and relational role to play (Tsai & Eisingerich, 2010), which facilitates critical intelligence gathering and sharing within the firm, we expect marketing capability to increase the chance of a firm's internationalization and R&D efforts to result in strong innovation performance.

Although it has been suggested that a firm's level of internationalization has significant consequences for a firm's innovation performance, we know little about the relationships between the degree of internationalization, R&D capability, marketing capability, innovation performance and the interactions among them. In the following sections we discuss the relationships between these in more detail by integrating the organization learning theory of international new venture, R&D capability, and marketing theory.

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