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# The impact of opportunity connectedness on innovation in SMEs' foreign-market relationships

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#### ABSTRACT

Small and medium-sized enterprises (SMEs) use of business networks has grown significantly during the last decades, partly due to increasingly complex innovation processes. This article investigates how different kinds of networks, depending on location, contextualize innovation in specific foreign market business relationships. Building on internationalization, network, and innovation research we develop a model that views opportunity connectedness in specific host-markets, home-markets, and other international markets as prerequisites to innovative collaboration and innovation outcomes in foreign business relationships. The results of our linear structural relations (LISREL) analysis of Swedish SMEs provide empirical evidence that the effect of opportunity connectedness on innovation outcomes in foreign business relationships is mediated by the level of innovative collaboration. These results indicate that SMEs need a relatively higher level of innovative collaboration in their partnerships with foreign market customers to convert opportunities conceived in home- and international- market networks. This finding implies that as opportunities become increasingly contextually remote, the importance of collaborative business relationships increases. By showing these results, the study contributes to research in the international small-business domain that seeks to identify important prerequisites of SME innovation.

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#### 1. Introduction

Over the past decade, the focus on firms' abilities to innovate has again become a key focal point owing to the rapid rate of technological change, shortened product life cycles, and the globalization of markets. Even though the bulk of private research and development (R&D) spending still comes from a small number of very large firms, disruptive breakthroughs often emanate from small and medium-sized enterprises (SMEs) (Baumol, 2004). In light of these developments, the current discourse regarding the requisites for SME innovation is vigorous, and Technovation is a particularly important forum for this debate (e. g., Radas and Božić, 2009; Radas et al., 2015; Tolstoy and Agndal, 2010; Uyarra et al., 2014; van de Vrande et al., 2009; Zeng et al., 2010). In this article, we investigate how access to opportunities in networks can enable SMEs to innovate in foreign markets. A wide array of previous studies have highlighted that networks facilitate international expansion and new business new business creation of SMEs

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http://dx.doi.org/10.1016/j.technovation.2016.04.001 0166-4972/© 2016 Elsevier Ltd. All rights reserved. (Coviello, 2006; Crick and Spence, 2005; Freeman et al., 2006; Lindstrand et al., 2011; Rovira Nordman and Melén, 2008; Sullivan Mort and Weerawardena, 2006; Zhou et al., 2007). There also are numerous studies dedicated to identifying different prerequisites of innovation in SMEs from both a developed country context (e. g. Löfgren, 2014; van de Vrande et al., 2009) and an emerging country context (e. g. Ren et al., 2015; Zeng et al., 2010). By performing this study, we build on this line of research and contribute with novel insights about how opportunities drawn from distinct networks (i. e. host-market networks, home-market networks, and international networks) influence innovation in specific foreign market settings. The specific purpose of this study is to investigate how networks, depending on their location, contextualize innovation in particular foreign market business relationships.

By following this approach, distinguishing and comparing effects between different distinct networks, we can contribute to research in the international small-business domain that seeks to identify important prerequisites of SME innovation. The study is, furthermore, practically relevant as is sheds light on the strategic impact of different regional support systems which could be useful when taking localization issues into account in the development of SMEs' innovation programs.

Networks are becoming increasingly important for firms, especially those that undertake innovative activities (Hagedoorn

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et al., 2000; Zeng et al., 2010). Networks are also particularly central for SMEs, which often lack tangible which often lack tangible resources (e. g., financial and human-capital resources) and, therefore, rely heavily on intangible resources that are accessed and employed outside the boundaries of the firm (Knight and Kim, 2009; Rovira Nordman and Melén, 2008; van de Vrande et al., 2009; Zeng et al., 2010; Zhou et al., 2007).

In this study we establish a link between the network level and relational level when analyzing foreign market innovation of SMEs. In line with ideas indicated in social network theory that individuals in firms can glean valuable information from weak network ties (i.e. ties to other firms that are signified by lower time-investments, lower reciprocity and lower emotional intensity/intimacy than strong ties (Sharma and Blomstermo, 2003)), we argue that weak-ties may be instrumental to extract value from resources and leverage innovative opportunities drawn from networks. Previous research has, moreover, suggested that firms which restrict their networks to include counterparts that they already know well (i. e. firms which they already have strong relationships with), risk acquiring more redundant information which, in its turn, may stifle innovation activities (Granovetter, 1973). Weak ties may thus supply more novel knowledge that can be used for innovative purposes than stronger ties (Rogers, 1980; Sharma and Blomstermo, 2003). Because of this, a wide and diversified network range has been suggested to be important for new business creation (Burt, 1982).

Building on the idea that a broad and diversified range of network relationships (including both strong and weak ties) provide greater access to important information and opportunities than would be possible if contacts where drawn from a narrower group, we investigate three groups of network locations in this study. The first is the specific foreign market network where a firm realizes business-transactions with at least one important actor that is located in that market, called "the host-market network" (see: Johanson and Vahlne, 2009). The second is the national market where a firm first initiates its business, here denoted "the home-market network" (see Manolova et al., 2010). The third group consists of additional foreign market networks, other than the home and host market networks, in which the investigated firms have foreign business relationships. This is referred to as "the international market network" (see: Laanti et al., 2007). In this study we specifically intend to capture network effects on innovation by using the term opportunity connectedness, which comprises firms' connections to opportunities in either the homemarket network, the host-market network, or the international market network. Hence, the study proceeds from the notion that opportunity connectedness is vital for SMEs that want to succeed with their businesses in foreign market settings. Opportunity connectedness is defined as a business relationship's dependence on knowledge based opportunities generated by input from a particular business network (i. e., consisting of customers, customers' customers, and suppliers). The importance of opportunity connectedness in local settings has been implied in recent articles discussing that international business opportunities emerge more frequently in inter-firm constellations than within the boundaries of individual firms (e.g., Freeman et al., 2006; Johanson and Vahlne, 2009; Melén Hånell et al., 2014; Tolstoy and Agndal, 2010).

We thus stipulate that innovative collaboration in specific hostmarkets is conducive for extracting value from opportunities that exist in various network settings. Innovative collaboration is defined as the extent to which SMEs perceive their foreign business relationships to be characterized by joint problem solving and innovative knowledge development that may lead to innovation. Innovative collaboration thus reflects "innovativeness" which denotes a behavior that determines the capacity for generating innovative business solutions (see Subramanian and Nilakanta, 1996). The independent variable used in this study, innovation outcome, is treated as a performance measure and involves the generation of actual innovation output in terms of new products and technologies. These outcomes include both radically new products and technologies, and products and technologies that are perceived as new by their developers (van de Ven, 1986). Such products and technologies may for example be incremental improvements in already existing products and technologies. Based on these concepts, we develop a model focused on the causal paths among relationship opportunity connectedness, innovative collaboration, and innovation outcomes in foreign business relationships of SMEs.

#### 2. Theoretical development and hypotheses

Firms' business relationships do not exist in isolation. Rather, they are often affected by developments in other connected relationships (Håkansson and Snehota, 1995). In a conceptual article from 2009, Johanson and Vahlne argue that the success of any internationalizing firm is dependent on its access to relevant network relationships in a market setting. Firms that are well established in a foreign-market network become "insiders", while firms without established network connections are "outsiders". Insidership in foreign networks is particularly important for learning about new foreign-market opportunities. For example, the knowledge acquired from one relationship might enable firms to discover and create new opportunities in other, connected, relationships (Eriksson and Chetty, 2003; Rovira Nordman and Melén, 2008; Sharma and Blomstermo, 2003). In addition, Lindstrand et al. (2011) find that knowledge about business opportunities acquired from customer and supplier networks in previous market assignments can be useful for developing business in the current market assignment which means that opportunities are connected and can cross borders. The relationship between knowledge driven and innovation oriented foreign business networks and increased innovation is also highlighted in a more recent study of internationalizing Swedish SMEs (Löfgren, 2014). In sum, these results collectively suggest that connectedness in network settings can be viewed as a requisite for innovation because it provides access to knowledge and resources that would otherwise be unavailable to individual firms (Powell et al., 1996).

Along these lines, the relationship between networks and innovation has been empirically substantiated in marketing and innovation research also outside the international business context, i. e. on firms operating in their indigenous markets (e.g., Cassiman and Veugelers, 2002; Belderbos et al., 2004; Zeng et al., 2010). For example, Zeng et al. (2010) found a significant positive relationship between networks and innovation performance in a study of 137 Chinese manufacturing SMEs. Studies in the field of international small business, in particular, have found that SMEs can effectively overcome size-related challenges by accessing resources in networks. SMEs do so by creating, transferring, and combining resources – activities that can enable them to discover business opportunities and align their business models with foreign-market requirements without costly research and planning (Coviello, 2006; Crick and Spence, 2005; Freeman et al., 2006; Rovira Nordman and Melén, 2008; Sullivan Mort and Weerawardena, 2006; Tolstoy and Agndal, 2010; Zhou et al., 2007). In numerous studies, opportunity discovery in the internationalization process has been found to be a consequence of leveraging the external competences of SMEs' foreign business relationships (Crick and Jones, 2000; Komulainen et al., 2006; Sharma and Blomstermo, 2003; Tolstoy, 2014). For example, in a study of eight Australian SMEs, Chandra et al., (2009) demonstrate that a high degree of connectedness in the SME's network can link and

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