

Network competence in Finnish SMEs: implications for growth

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This is a Post-print version of a publication

published by Emerald Publishing Limited

in Baltic Journal of Management

DOI: 10.1108/BJM-02-2015-0032

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Please cite the publication as follows:

Torkkeli L., Kuivalainen O. Saarenketo S., Puumalainen K. (2016). Baltic Journal of Management. Baltic Journal of Management, Vol 11, Issue 2. p. 207-230. DOI: 10.1108/BJM-02-2015-0032

**This is a parallel published version of an original publication.
This version can differ from the original published article.**

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Cite as: Torkkeli, L., Kuivalainen, O., Saarenketo, S. & Puumalainen, K. (2016). *Network Competence in Finnish SMEs: Implications for Growth*. *Baltic Journal of Management*, 11(2), 207-230. DOI: <https://doi.org/10.1108/BJM-02-2015-0032>

Abstract

Purpose - The purpose of this paper is to examine how network competence is related to the growth of domestic and international SMEs originating from the Nordic region. Business networks have been found to drive internationalization of SMEs in the Nordic context, but the impact of network-related organizational competencies on them has not been considered.

Design/methodology/approach - The authors apply regression analysis on a sample of 298 Finnish SMEs across five industry sectors, gathered via an online survey in 2008, and with the data having been updated for its financial indicators up to 2010.

Findings - The authors find that cross-relational network competence is a significant predictor of growth in internationally operating SMEs. This result is robust across measures among the firms. In comparison, the network competence of domestically operating SMEs is not related to their growth, and relationship-specific competence does not influence growth.

Research limitations/implications - The study does not account for longitudinal aspect of competence development. Growth is measured by the growth in sales and assets, and there are other ways to measure organizational growth. A single-country context also extends some restrictions on the generalizability of the results, although they could be expected to hold across small, open economies similar to Finland and the Nordic area.

Practical implications - The results imply that the strategic aims of SMEs determine their need for network competence, those SMEs seeking internationalization and growth through geographic expansion come to benefit from developing certain types of network competence.

Social implications - Policy implications arise where governments in Finland and in the Nordic area may aid SMEs' internationalization efforts by enabling the growth-seeking firms with increased resources for competence development.

Originality/value - This is the first study to examine how the organizational competencies to develop and manage business networks, in particular dyadic and network-level competencies, come to determine realized growth outcomes in domestic and international SMEs. It contributes to the theory of SME internationalization and international entrepreneurship from the business network point of view, while providing further knowledge on internationalization of SMEs originating from the Nordic area.

1 Introduction

The purpose of this paper is to examine the role of network competence in the growth of internationalizing Finnish small and medium-sized enterprises (SMEs). Such a view into international entrepreneurship is of the essence in Nordic entrepreneurship for both theoretical and practical managerial and policy implications, and this is due to several reasons. First, SMEs have long been found to be essential generators of economic growth, and thus an integral part of the Nordic area economies (see Hultman, 1999; Stenholm et al, 2012). However, more recently, Napier et al. (2012) noted that the Nordic region still struggles to realize the growth potential of young firms towards larger companies, despite the fact that in Nordic countries, starting a business is comparatively easy by many metrics (e.g., by the number of procedures required to do so, by costs and capital required). In particular, their review (p. 49) finds that entrepreneurship is still not seen as a particularly good career choice in the Nordic area. Taken together, these findings suggest that despite the undeniable promise offered by growth-oriented entrepreneurship to the future of Nordic economies, there still remain a host of societal, governmental and managerial obstacles hindering its full realization. Autio (2009) even notes that our focal country, Finland, lags behind most of its Nordic peers in prevalence of high growth entrepreneurial activity. Furthermore, there is a lack of international orientation and growth orientation (Nummela et al, 2005; Stenholm et al, 2012) among Finnish SMEs.

Second, distinctly Nordic research traditions with accompanying models have formed in various fields of study: in entrepreneurship (Hjorth, 2008), international business (Björkman and Forsgren, 2000), and in marketing in general (Hultman, 1999). Moreover, international entrepreneurship, i.e., “the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services” (Oviatt and McDougall, 2005, p.540), a field of research residing at the meeting point of international business and entrepreneurship, has similarly received a substantial contribution from Nordic scholars. For instance, Nummela and Paavilainen-Mäntymäki (2014) find that Finnish researchers in the field of international entrepreneurship alone have been involved in 36 of the total 323 journal articles published in the field. Nummela and Paavilainen-Mäntymäki further note that topics centered on networks and social capital have been of particular relevance in the Finnish context (see also Sasi and Arenius, 2008), and other studies extend this notion to the Nordic region in general (e.g., Madsen and Servais, 1997; Salmi, 2000; Melén and Nordman, 2007; Jansson and Sandberg, 2008). The Nordic approach to entrepreneurship has thus emphasized internationalization as a

way to overcome the small domestic markets prevalent in the area, with international growth as a way to succeed as an enterprise, and business network relationships as a viable and necessary vehicle with which to overcome the liabilities of smallness and outsidership (Johanson and Mattsson, 1988; Johanson and Vahlne, 1990; 2003; 2009; Schweizer, 2013).

However, overall, the amount of empirical studies concentrating on the role of networks in the SME internationalization context has remained somewhat limited (Nummela, 2011), and this limitation applies to networking-related capabilities in particular. Sapienza et al. (2006) have argued that it is not just the fact of a firm being embedded in a business network as such that results in growth among internationally operating small firms, but rather that it is the accompanying development of organizational capabilities that helps them to achieve sustainable growth. This notion implies that organizational capabilities related to developing and managing network relationships could distinguish between growing and failing enterprises, particularly in the Nordic area where the relevance of network relationships to internationalization of enterprises has been found to be high. However, while there have been a host of conceptualizations of network(ing) competencies and capabilities (e.g., Ritter et al., 2002; Mort and Weerawardena, 2006; Walter et al., 2006; Mitrega et al., 2012), a recent review of past international entrepreneurship (IE) research by Jones et al. (2011) finds that networking-related capabilities are still often discussed in the field as the capabilities of founders of firms to network individually, rather than as organizational capabilities at the firm level. Thus, the research on IE in the Nordic context stands to gain from further clarification of how networking-related organizational capabilities are related to growth of local enterprises in general, and to their international growth in particular.

Therefore, our aim in the present study is to examine how such a capability affects the growth of SMEs originating from the Nordic area, and whether its effect on firm growth differs between domestic and international SMEs. We refer to this capability as network competence (Ritter, 1999; Ritter et al., 2002), which is defined as the ability of firms to develop and maintain relations with key partner organizations and customers, and to deal effectively with the interaction in those relationships. As extant research on internationalizing SMEs has found that business networks may enhance the growth of SMEs (Lu and Beamish, 2001; Zhou et al., 2007), yet the possibility of network competence having an effect on their growth has not yet been assessed. Consequently, we argue that based on extant academic research in the Nordic area, higher levels of network competence should be linked to increased growth in SMEs in general, and in internationalizing

firms in particular. Our empirical analysis of Finnish SMEs indicates that network competence is beneficial for growth through internationalizing, rather than domestic enterprises, and that the benefit of network competence for their growth derives from the network-level (cross-relational), rather than dyadic-level (relationship-specific) competence. We then discuss the contribution of these results to the Nordic research on entrepreneurship and their practical policy and cultural implications for both the Nordic area in general, and for the Finnish context in particular.

The rest of the study is constructed as follows: Sections 2 and 3 discuss the theoretical underpinnings related to the importance of network competence for entrepreneurship and internationalization of enterprises in the Nordic area in particular. Section 4 describes the empirical data and methodology used, with section 5 presenting the results of the analysis to which they were applied. We further discuss the results and their theoretical, managerial and policy implications in section 6 and conclude the study in section 7 by summarizing some limitations of the study and potential further research avenues related to the results and to the Nordic context in general.

2 Network Competence in Growth of Nordic SMEs

Organizational growth has been studied in entrepreneurship literature through the years (e.g., Delmar et al., 2003). However, the theoretical discussion on growth has been somewhat incoherent, as there are many factors contributing to firm growth (Weinzimmer, 2000). Moreover, growth patterns between firms differ, as do growth objectives, even among different types of SMEs (Bell et al., 2004). Internationalizing firms need to be growth oriented (Autio et al., 2000) and their managers need to possess a global mindset (Nummela et al., 2004), yet the fact remains that the concept of growth in internationalizing enterprises is a complex concept. Thus, in the present study, for the sake of simplicity, when we refer to growth of SMEs, we limit the view to their absolute growth as measured through financial growth in sales and assets across a specific period of time.

There have been some studies in the Nordic context emphasizing the role of business networking and networks in the growth of SMEs. For instance, Chaston (1995) found that on a national level, networking policy initiatives may enhance the growth of an entire SME sector. Havnes and Senneseth (2001) on the other hand, found that business networking among SMEs was not directly

linked to their performance, but rather to their market expansion. Some differences in growth of Nordic SMEs may also come from their abilities as organizations. For example, Salojärvi et al. (2005) note that the capacity for knowledge management distinguishes rapidly growing companies in particular. This implies that it may be organizational capabilities related to networking, rather than networking as such, that is linked to increased growth among SMEs originating from the Nordic area.

Nordic business research, in particular that related to business networks, has also highlighted the importance of being embedded in network relationships with other businesses (Håkansson, 1982; Håkansson and Snehota, 1989). “No business is an island” (Håkansson and Snehota, 1989) has been a major assumption in network research, which has seen business networks behind successful market operations not only in the international context, but also in business overall. The units of analysis in network literature relate to actors (i.e., firms), nodes (linkages between them) and networks (sets of inter-connected nodes; see Håkansson, 1982; Håkansson and Snehota, 1995). Literature has also discussed the structure of business networks, e.g. centrality (Cook, 1977; Ibarra, 1993; Tsai and Ghoshal, 1998) and strength of ties (Granovetter, 1973; 1983; Friedkin, 1982). In sum, dyadic relationships tend to form larger business networks (Anderson et al., 1994) of interlinked relationships (Bengtsson and Kock, 2000). Network relationships have been found to be crucial in the Nordic context in particular; the size of the network may increase firm performance (Nybakk et al., 2013), while social networking may impact innovativeness (Nybakk et al., 2009; Nybakk et al., 2008).

While network scholars have suspected that firms cannot manage their business network but instead can just try to cope with them (e.g., Ford et al., 2002; Wilkinson and Young, 2002), others have suggested that in order to be able to leverage those network relationships to successful growth and other outcomes, firms need to and can develop network competence (Gemünden and Ritter 1997; Ritter 1998; Ritter et al. 2002). This is broadly defined as the ability of a firm to develop and maintain its network of business relationships. This distinction has meant that, in practice, organizational competencies and capabilities in general, and those related to developing and managing business networks in particular, have mostly remained in literature on strategic management, rather than being discussed among business network scholars. Various network-related dynamic capabilities have been recognized, however, including networking capability (Mort and Weerawardena, 2006; Mitrega et al., 2012) and network capability (Walter et al., 2006).

However, the application of these capabilities to entrepreneurship and international entrepreneurship in particular has been lacking.

Network competence further distinguishes itself from these alternative network-related capabilities in that it includes both dyadic and network-level organizational ability: In other words, it consists of task execution activities (that is to say, organizational competence) and social and specialist qualifications (individual competence of the employees involved in network relationships), the former of which is further divided into relationship-specific and cross-relational competence (Ritter, 1999; Ritter et al., 2002). Relationship-specific competence comprises the organizational activities related to developing and maintaining individual dyadic relationships between network actors, thus addressing the activities related to initiating new relationship dyads, exchanging information between the parties in the relationship, and coordinating the relationship activities optimally for the focal company (Ritter et al., 2002). Correspondingly, cross-relational competence captures the ability of the firm to manage a host of dyadic relationships embedded within a larger network (see Anderson et al., 1994; Turnbull et al., 1996), and comprises the activities related to planning and controlling the alignment of network relationships so as to benefit the focal company, and to ensure that proper employees are responsible for monitoring and evaluating the outcomes of the business network from the point of view of the company (Ritter et al., 2002). As networking is essential for the success of any company (Håkansson and Snehota, 1989), particularly for those seeking international operations (Johanson and Mattsson, 1988; Johanson and Vahlne, 2003; 2009), network competence comprises an organizational dynamic capability (Teece et al., 1997; Eisenhardt and Martin, 2000); one which can be developed and may be beneficial for company strategy.

While network competence has not been linked to firm growth before, some studies have found beneficial outcomes for firms possessing network competence on innovation performance (Chiu, 2008; Ritter and Gemünden, 2003; 2004), technological interweavement (Ritter et al., 2002) and international performance (Torkkeli et al., 2012). Therefore, its relevance as a network-related concept and construct suitable for business studies has received some support in extant literature. However, so far it has not been investigated as to whether network competence is also linked to the growth of enterprises. Therefore, based on the extant literature on business networks and networking in the Nordic context, we could assume that those companies with the most ability to develop and manage their networks would be able to grow their business more than those who do not possess such ability. Consequently, we might expect this effect to manifest itself particularly

well in the context of SMEs from the Nordic area, since it consists of small open economies with 1) small domestic markets, 2) high rates of SMEs compared to other types of firms, 3) the relative importance of the SMEs to the overall economy, and 4) the prevalence of knowledge-intensive, high technology industry sectors where the companies tend to be small and niche-oriented. Thus, we posit that possessing network competence enables local SMEs access to the resources they need in order to overcome their liability of smallness and achieve what growth is available in those markets, i.e., to improve their competitive position in order to capture a larger share of their small, competitive domestic market:

- H1: Higher levels of relationship-specific network competence are positively related to higher levels of growth among domestic SMEs.
- H2: Higher levels of cross-relational network competence are positively related to higher levels of growth among domestic SMEs.

3 Network Competence and the Growth of Internationally Operating SMEs

Being embedded in networks has traditionally been seen to assist in internationalization efforts of firms in general, starting from the network approach to internationalization (Johanson and Mattsson 1988), an internationalization model in turn being grounded upon the earlier “Uppsala” model (Johanson and Wiedersheim-Paul 1975; Johanson and Vahlne 1977; 1990; 2003; 2009). The common element to these approaches has been that they see the internationalization process of firms as following an incremental learning pattern, where a gradual learning of culturally and geographically closest markets enables the firm to subsequently internationalize, and thus reach more distant markets over time, in “stages”. The network approach sees business networks of the firm as acting as this catalyst to its gradual increase in international commitment. The networks in which the firm is embedded have, in the network approach, been seen as the vehicle that allows the learning process from other network actors to take place. Subsequently, as the network develops, eventually some of the actors within may reside in foreign markets, and it is seen possible for a firm to learn from the potential new foreign markets through these relationships. It is notable that the empirical context of these traditional models of internationalization has been with SMEs from the Nordic area. Thus, we could expect the models to be particularly relevant in this context.

Small firms operating under these kinds of environments, having no choice but to internationalize rapidly in order to achieve sufficient growth, have also been termed “born globals” (Rennie, 1993; Madsen and Servais, 1997) or “international new ventures” (Oviatt and McDougall, 1994). By their nature, their rise has led to criticism of the more gradual “stages” models (e.g. Bell 1995), and new explanations and models of how SMEs in industries characterized by high knowledge-intensity actually currently enter foreign markets and subsequently grow as ventures.

Extant research in the Nordic context also suggests that, in addition to starting to operate domestically, SMEs that are able to enter and make use of business networks may also experience increased growth, overall as a firm, but especially deriving from their foreign operations (Gabrielsson and Kirpalani 2004; Kuivalainen et al., 2007; Sasi and Arenius, 2008). This “international growth” can be growth in overall sales of the firm, achieved via gains in market share in different foreign markets. This is because the threat of market saturation globally is smaller for an internationally operating SME than for a domestic SME, particularly if the firm is niche-oriented. Research literature points towards the importance of networks for SMEs aiming to overcome their inherent constraints and entering foreign markets, as well as in achieving success therein (Coviello and Munro, 1995, 1997; Loane and Bell, 2006). Most of these studies have been qualitative and have concentrated on the structure, nature and dynamics of the networks.

The increasingly knowledge-intensive nature of new small firms is also associated with increased growth by entering international markets (Autio et al., 2000), and with increased competition in foreign markets (Loane and Bell, 2006). A main force driving SMEs originating from the Nordic region is their often niche-oriented business model and the fact that they originate from small domestic markets not big enough to support the SME long-term. What they seek by internationalizing is therefore increased growth (Gabrielsson and Kirpalani, 2004; Sasi and Arenius, 2008). The importance of networks has been emphasized as a way for them to acquire marketing and other resources needed for successful foreign market entries, thus making more rapid and intense internationalization to global markets possible (Madsen and Servais, 1997; Chetty and Blankenburg-Holm, 2000; Knight and Cavusgil, 2004; Pittaway et al., 2004). The process of internationalizing an SME is often intertwined with its subsequent growth in international markets (Kuivalainen et al., 2007), indicating that when networks are seen behind the decisions of SMEs to internationalize, their selected pathways to foreign markets, their subsequent export performance and overall growth of the firm is implicitly indicated in the same

breath. That is to say, when networks are found to be linked to the internationalization process of SMEs (see e.g. the reviews by Coviello and McAuley, 1999; Jones et al., 2011), they not only make it possible to internationalize despite the constraints of the small size that characterizes them, but also enable them to reach global markets of sufficient size to support their strategy, thus gaining increased sales and enabling them to acquire assets in those markets.

Simultaneously, it is not only those networks as such, but also the development of organizational capabilities such as network competence that increase the probability that an internationalizing small firm will experience growth through international markets (Sapienza et al., 2006). Network competence has been found to have beneficial effects on the propensity of SMEs to become international and it is associated with a higher degree of internationalization and the meeting of strategic goals firms have set for the internationalization process (Torkkeli et al., 2012). As internationalization of an SME may follow a path where the network members of the potential new venture initiate actions that make internationalization possible (Chetty and Blankenburg-Holm, 2000), being competent in developing and maintaining one's networks may lead to increased opportunities from increasing amounts of network relationships. Thus, increased growth through international operations is made possible.

In the Nordic context, the importance of network-driven internationalization is particularly crucial, as the Nordic SMEs originate from small open economies where the domestic market potential is limited and is the type of market where studies have repeatedly emphasized the prominence of business networks and networking for achieving growth through internationalization (e.g., Bell, 1995; Coviello, 2006; Loane and Bell, 2006). As the revised Uppsala-model of internationalization, developed in the Nordic context suggests, firms tend to suffer from "liability of outsidership" (Johansson and Vahlne, 2009), and since the SMEs originating from the area seek larger markets outside their domestic borders, the influence of network competence on their successful internationalization could be expected to be particularly pronounced. Consequently, internationalization allows SMEs originating from the Nordic markets to gain a foothold in larger markets, thus enhancing their growth further. This implies that the positive impact of network competence upon the growth of these SMEs should be further heightened in the context of internationalization:

- H3: The positive influence of relationship-specific network competence on SME growth is more pronounced in internationalized SMEs.

- H4: The positive influence of cross-relational network competence upon SME growth is more pronounced in internationalized SMEs.

4 Research Methodology

4.1 Sampling and data collection

The data used to test the hypotheses were gathered by a web survey for Finnish small- and medium-sized entrepreneurial firms of 10-500 employees. A database search for firms fitting the description was conducted in the Amadeus online database, and included SMEs across five industries: two that are characterized by knowledge-intensity (knowledge-intensive business services and software industry), and three from the more traditional manufacturing industries (food, furniture and metal industries). The resulting 1147 firms were sent an e-mail link to the web survey online, and the results were gathered during the first part of 2008. The items in the survey were back-translated and some were negatively worded in order to avoid agreement bias. The first part of the survey was similar to all the respondents, but for internationalized firms, the survey included an additional part with items relating to the level and type of their international activities.

The final sample included 298 responses, a 26% response rate. 60% of these were from domestic and 40% from internationalized firms, with 44% of the total being from the knowledge-intensive industries. Most respondents were managing directors or owners of the firm (86% in total). The average turnover among the respondent SMEs at the time of the survey was 5.7 million Euros, ranging between 0.2 million to 158 million euros. For the purposes of this study, the balance sheet information for the respondents was updated in August 2011, to include the financial statements of the SMEs from up to 2010.

4.2 Measures

4.2.1 Network Competence

A shortened version of the original NetComp scale (Ritter et al. 2002) was adapted for use in the study and was identical to that used in the study by Torkkeli et al. (2012). The network competence items were measured through a 7-item Likert scale, and a confirmatory factor analysis model was constructed with some items removed, as suggested by Anderson and Gerbing (1982; 1984; 1988), to reach a final construct including 15 items. The average variance of extracted values were all above 0.50 and composite reliabilities 0.67 or above, indicating sufficient discriminant validity and supporting network competence as a two-dimensional construct consisting of the relationship-specific (RSS) and cross-relational (CRR) network competence dimensions, in line with Torkkeli et al. (2012). Additionally, the fit indices were above 0.90 (CFI=0.95, NFI=0.91, GFI=0.91), the Root Mean Square Error of Approximation (RMSEA) value for the model was 0.068, and the normed chi-square value was 2.12. Therefore, the items included were considered to present an adequate construct of network competence. The final construct included 9 items in the relationship-specific (RSS) sub-dimension and 6 items in the cross-relational (CRR) sub-dimension. The final scale values for RSS and CRR were thus calculated as summated item scores divided by the number of items included in each, in order to achieve similar scale values (1-7) compared to the original items. The items included are listed in appendix 1.

4.2.2 Firm Growth

Firm growth was measured through two indicators, growth in sales and growth in assets from 2004 to 2010. To account for the effect that firm size would have on the overall growth numbers, the resulting sales and asset growth variables, measured in euros, were divided by the number of employees within the firm.

The resulting indicators of firm growth, therefore, were the growth in sales per employee and the growth in asset per employee from 2004 to 2010. The financial data were derived from the Finnish Voitto database, which includes the balance sheet information provided by corporations as required by law. The financial information was derived from the database for all survey respondents and incorporated in the dataset. The growth measures were calculated as the difference in sales and assets, respectively, from 2004 to 2010, and this timeframe was selected in order to account for different market environments as the years 2004-2007 consisted of a market upturn in the Finnish markets (and in Nordic markets in general), and 2008-2010 presented a market downturn. By including these years, we thus sought to extend the generalizability of the

results across differences in the macro-environment. Moreover, by dividing the absolute figures by the number of employees, the measure would include both organic and non-organic (financial and non-financial) indicators. Finally, the difference between “growth firms” and others was conceptualized as a dichotomous variable, with those firms having achieved growth in both sales and assets during the time period coded as “1” and others as “0”.

4.2.3 Control Variables

When testing for hypotheses H1-H4, we controlled for the possible effects that the industry (knowledge-intensive or not) and firm age could have upon the magnitude of the growth. In similar manner, industry was controlled for in the analyses through a dichotomous variable for knowledge-intensity, with the sample SMEs from knowledge intensive business services (KIBS) and the software industry being coded as “1” and respondents from food, metal and furniture industries coded as “0”.

The descriptives and intercorrelations of the variables included in our empirical analysis are illustrated in table 1.

(Take in table 1)

As non-response bias can be associated with such a survey questionnaire, we conducted tests of homogeneity for non-response bias, as suggested by Armstrong and Overton (1977). The results indicated no significant differences between the early and late respondents, and thus non-response bias was not considered to be an issue.

5 Results

We conducted separate regression models for the RSS and CRR hypotheses due to several reasons. First, their relatively high inter-correlation (Pearson’s correlation coefficient = 0.74) suggested potential multi-collinearity issues if both were included in a joint regression model. Our initial test appeared to support this possibility, as both the tolerance and variance inflation factor (VIF) values were relatively high in all models with the CRR and RSS variables included jointly. In addition, conducting separate models for each allowed us to include the control

variables in the models, without potential over-fitting issues resulting from small sample sizes. Thus, we constructed separate models to test each of the four hypotheses.

5.1 Testing for the influence of network competence on growth of domestic (H1-H2) and international (H3-H4) SMEs

The results explaining the magnitude of growth in the sample SMEs, as illustrated in table 2, indicate support for hypothesis H4. This is to say that the network-level, cross-relational dimension of network competence is a major explanatory factor behind higher growth in international SMEs. Specifically, when sales growth was used as the dependent variable in the linear regression modeling in the SPSS 22 software package, the cross-relational dimension was the only statistically significant coefficient in the models, and specifically in the analysis conducted for the internationalized firms' sample. As seen in table 2, the cross-relational network competence explains ca. a quarter (adjusted $R^2=0.24$) of the sales growth in the international firms, and the model is significant at the 5% risk level. The coefficient for cross-relational network competence was positive as expected (0.36), and also significant at the 5% risk level. The industry control variables were non-significant, as was the firm age variable, indicating that the effect of the cross-relational network competence on SME growth was not obstructed by industry or firm age. Similar results were found when conceptualizing growth as the asset growth of the firm, with the model explaining ca. a fifth (19%) of the growth in assets, with the cross-relational coefficient again being positive (0.48) and highly significant at the 1% risk level.

On the other hand, the relationship-specific network competence dimension was not statistically significant in any of the models. While the coefficient itself was positive as expected in all analyses, its effect on the magnitude of growth did not reach that of the cross-relational dimension, and none of the regression models with the relationship-specific dimension as a whole were statistically significant at either the 1% or the 5% risk levels. Additionally, the significant effect of the cross-relational dimension was also restricted to the sample with the international firms only, indicating that the positive effect of possessing cross-relational network competence was limited to the SMEs operating in foreign markets only. Thus, H1-H3 did not receive support.

(Take in table 2)

5.2 Robustness checks

In order to ensure the robustness of these results, we conducted the corresponding binary logistic regression models, in which the type of the firm was operationalized as follows: “1” denoting an SME that had achieved both sales and asset growth during the selected time period of 2004-2010, and “0” denoting one that had not achieved both. The results of these analyses are summarized in table 3, and yield identical results to those exhibited when checking for H1-H4. The statistically significant model remained the cross-relational network competence model for the sample of international SMEs, with the Chi-square test (6.50) being statistically significant at the 5% risk level. In this specific model, the cross-relational coefficient (CRR) was statistically significant at the 5% risk level (Wald’s value = 4.51), and its effect on the sales growth measure again was not obstructed by the industry of the SMEs, as the industry control variable was non-significant.

(Take in table 3)

As neither of the two models for the domestic SMEs, nor the relationship-specific model for the international SMEs were statistically significant, it could be concluded that the results of the analyses testing for H1-H4 were indeed robust and applied not only to the magnitude of sales and asset growth in the SMEs themselves, but that the cross-relational network competence also explained the difference between the firms having achieved growth in the first place, compared to other firms.

5.3 Post-hoc tests

In order to explore the results further, we conducted post-hoc analysis for the entire sample, which enabled a large enough sample to include specific industry sectors as control variables, to differentiate between “small” (up to 50 employees) and “medium-sized” (50-500 employees) SMEs, and to include dichotomous variables for internationalization, separating between the domestic (“0”) and the international (“1”) firms. Furthermore, instead of controlling for the different industry sectors through a dichotomous variable, in the post-hoc analysis we included individual dichotomous variables for different industry sectors. The results, shown in table 4, provide further indication that the cross-relational (CRR), rather than the relationship-specific (RSS) network competence, is a significant explanatory factor of increased growth among the SMEs, whether growth is measured through assets or sales.

(take in table 4)

While each of the regression models were significant, this did not result from the impact of RSS network competence, as its coefficient was again non-significant in all of the models, rather the size control variable provided the explanation; the larger size of the SME was a major explanatory factor of its growth. This was a logical result, as one would expect larger firms to achieve larger absolute growth measures compared to the smallest (10-50 employees) SMEs. In addition, the dichotomous variable distinguishing between the domestic and international SMEs was non-significant in all models, implying that the difference in their growth was not determined by how likely they were to be international rather than domestic firms, but that network competence was relevant to the growth of the SMEs in the international context specifically. Thus, the post-hoc analysis provided further clarification and emphasis of the original results; the impact of network competence on SME growth was found to be accentuated in the international context, with the cross-relational competence being found to be of particular importance.

6 Discussion

The results obtained from the regression models emphasize various aspects for the growth of SMEs in general. Firstly, they help to further confirm the notion that being embedded in networks helps SMEs to successfully enter foreign markets and perform once there, as indicated by Coviello and Munro (1995) Sharma and Blomstermo (2003) and Agndal and Chetty (2007), among others. However, the existence of these networks themselves does not fully give answers to the question of how a Nordic entrepreneur aiming for growth through international markets is to develop and act in the network, how to maintain relationships within the network, and what kinds of processes and organizational practices are needed to be competent in building such networks. Our results indicate that a specific organizational competence, cross-relational network competence, is needed for an SME to successfully achieve growth through international markets, and that by developing this competence, the results in measurable growth are evident in a rather short time period, in this case through growth figures over six years. However, a similar beneficial effect is not found for domestic firms. The result aligns with Babakus et al. (2006), who found that foreign networking, rather than domestic networking, is related to performance of internationally operating SMEs. The non-significant result of higher network competence on domestic growth of

the firms echoes that of Havnes and Senneseth (2001), who also noted that networking may not be as beneficial for domestically operating SMEs.

Our empirical analysis also shows specifically that the international SME benefits from possessing better network competence. The results for hypotheses testing did not provide any evidence that network competence would enable domestic SMEs to achieve better sales or asset growth, or indeed to achieve those two at all. In contrast, however, for the international firms, concentrating on improving their network competence can pay dividends through increasing sales and through acquiring more assets. Moreover, the results indicate that for growth, it is more important for the international entrepreneur to concentrate primarily on trying to maintain the business network through network-level activities of planning, organizing, controlling and staffing, rather than to concentrate on initiating, coordinating and facilitating exchange of knowledge and goods between singular business relationships within the network. In this sense, the results seem to indicate that when it comes to business networks and growth of SMEs through internationalization, the “big picture” matters more than singular network relationships. This may be since, as Coviello (2006) points out, as international new ventures evolve and grow, the range of their network tends to increase and the network density decreases, leading the firm to assume an increasingly central position within the network, thus emphasizing the cross-relational aspects of developing and maintaining the network.

6.1 Theoretical implications

The results of this study contribute in several ways to the literature on international business and internationalization of SMEs in the Nordic context. First, our results align with the suggestion in SME internationalization literature, originating both from the Nordic area as well as from other small open economies, indicating that SMEs need to network in order to achieve growth abroad (e.g. Coviello and Munro, 1997; Loane and Bell, 2006; Sasi and Arenius, 2008). However, the results of the present study also extend those studies by suggesting that in addition to networking, the key to growth in international markets is for SMEs to develop organizational network competence. These results are thus relevant for both international entrepreneurship, where rapidly internationalizing and growing SMEs are predominantly studied, but also provide further insight into the network-related models of internationalization prevalent in the Nordic international business literature. The results are specifically relevant to the network approach to

internationalization (Johanson and Mattsson, 1988) and the revised Uppsala-model (Johansson and Vahlne, 2009), which has incorporated the business network as the vehicle of knowledge accumulation and thus, the main catalyst for the internationalization process.

While these models consider business networks and network relationships as essential antecedents to successful internationalization and the growing degree of internationalization in scale and scope, we further posit that, as firms differ in their ability to develop and manage network relationships, i.e., they possess differing amounts of network competence, the extent of international growth firms originating from the Nordic area may come to be determined in part by the extent of this competence. Therefore, the present study contributes to link the dynamic capabilities literature originating from strategic management (Teece et al., 1997), to network theories and the models of internationalization traditionally prevalent in studies of international business in the Nordic context. The results further suggest that network-level competences may be more important for the growth of international SMEs than the dyadic ones, and this study is among the first to distinguish between dyadic and network-level competence in SME internationalization.

The conceptual difference between being competent in steering the network as a whole, and being competent in forming and maintaining individual network relationships within it is rarely made. Even rarer has been the application of this distinction to the SME internationalization discussion. We see this as an important avenue for gaining further insight into the process of SMEs to leverage their networks to achieve international growth and improved performance. Therefore, the present paper will examine the effect that network-level competence in business networks (termed “cross-relational” network competence dimension, as per Ritter et al. 2002) and the dyadic “relationship-specific” network competence (ibid.) each have on growth of SMEs, and whether such competences are particularly relevant to SMEs operating in international markets, as earlier international entrepreneurship literature suggests. Thus, the results linking the network competence scale to growth of international SMEs contribute to the discussion of how exactly business networks enable smaller firms lacking from resource constraints to grow through international activities, what being competent in a business network theoretically entails, and specifically what kinds of activities executed to navigate as an SME within one’s business networks contribute to achieving the growth necessary for incurring the costs entailed for international entrepreneurship.

Consequently, the notion that network-level competence might be more indicative of international SME growth than competence in any specific relationships within that network is a novel one. Thus, we see the results of this study contributing not only to the discussion of network-driven internationalization of SMEs and their subsequent growth, but also to the discussion around how to conceptualize those networks and the related organizational competences. Here we could see some conceptual linkages to the findings of e.g. Sigfusson and Harris (2012) who have pointed out the importance of weak ties in international entrepreneurship. That is, the ability to build networks consisting of weak ties could be related to the competence of management of a larger network required for accelerated internationalization. Finally, as the network competence items were included in the survey during the spring of 2008, with the financial indicators updated for 2010, our study contributes to explaining how organizational competences may help an SME to maintain its growth through worldwide recessions, such as the one occurring during the past few years and having hit the Finnish SMEs as of 2008.

6.2 Managerial implications

We see a number of managerial implications arising from the results of this study. The first is that in when trying to achieve growth through international operations, network competence matters. Specifically, to increase sales and acquire more assets over several years, it is quite beneficial, perhaps even necessary, to concentrate on proper staffing of network relationships accordingly, to control how the business network as a whole keeps benefitting the firm, to actively organize the resources needed for increasingly better functioning networks, and to plan how specific network relationships can be made to contribute to the outcomes from the network as a whole. The cross-relational network competence dimension entails these aspects by providing the manager a set of organizational practices that can be applied to increase these network-level activities. To actively evaluate the importance and results of individual partnerships to the overall business network, and to specifically compare how individual network partners compare with each other, is a start. Assigning employees to specific network relationships, initiating meetings where they come together, and assessing how much effort they put into network relationships are some of the additional steps a manager of an international SME, regardless of industry, the age of the firm or its size, can take to increase the odds of achieving faster growth.

While network competence was not directly found to lead to growth in domestic markets within the firms only operating there, networks and network competence do provide a way for a domestically operating SME to overcome its resource constraints and become international, so any manager aiming for growth through entering international operations can increase the odds of doing so in the long term by first improving the organizational network competence of the firm. For the public policy makers this could imply that strategies which support SMEs' internationalization from the Nordic and Baltic area (or small open economies in general, see Luostarinen and Gabrielsson, 2006) should contain network competence building and networking activities in general.

In sum, SMEs aiming to grow through foreign market operations need to understand the concept of network competence and how to develop their cross-relational competence in particular. Consequently, managers of SMEs originating from the Nordic area should make their decisions on assigning efforts to develop network competence based on their strategic goals; for those seeking rapid growth through international operations, cross-relational network competence can be essential. Conversely, for domestic SMEs prioritizing other strategic objectives such as maintaining profitability instead of seeking aggressive growth, committing financial and human resources to managing network relationships may not be quite as critical. For these companies, instead of concentrating on developing general network competence, some other strategy such as concentrating on specific types of network partners in the context of strategic nets may instead constitute a more viable course of action (Möller and Svahn, 2003; Möller and Rajala, 2007). This implies that the growth goals and target markets of an SME may come to determine the relevance and timing of the corresponding competence development.

One interesting area for continued study could be to further contrast the activities of SMEs at the network-level to those aimed at individual network relationships. As research literature supports the idea that individual partnerships, alliances and strategic alliances, and the organizational competence of firms to manage them contribute to firm growth, the fact that the relationship-specific component of network competence was not found to lead to similar effect in this study could be clarified further. For example, it could be examined whether the organizational competence in individual dyadic business partnerships differs conceptually from individual partnerships within the network framework.

7 Conclusion

Our aim in this study was to investigate the relevance of an organizational network-related capability on the growth of small- and medium-sized enterprises in the Nordic context. Thus, we aimed to contribute to the Nordic traditions in international business and entrepreneurship (cf. Björkman and Forsgren, 2000; Hjorth, 2008), particularly as SMEs are such an integral part of the Nordic economies (Hultman, 1999; Stenholm, 2012). Moreover, the extant research conducted in this context has found business networks to be vital for the growth of enterprises in general (see Hjorth, 2008), and for international enterprises originating from the area in particular (Madsen and Servais, 1997; Salmi, 2008; Melén and Nordman, 2007; Sasi and Arenius, 2008).

Specifically, we aimed to contribute to this discussion by examining how the *ability* of SMEs in the Nordic context to develop and manage their business networks is related to their growth as businesses. The results of studies investigating the role of networks on performance of SMEs in the domestic context has yielded mixed results (see e.g., Havnes and Senneseth, 2001; Salojärvi et al., 2005), and the impact of network-related capabilities on growth of SMEs in the Nordic context could still be clarified. In addition, Nummela (2011) noted a similar omission in the context of international entrepreneurship. However, the interlinkedness of networks, capabilities and seeking of international growth opportunities has been suggested by Vissak (2007). This study therefore contributes to the discussion on growth of small- and medium-sized enterprises in the Nordic area, by suggesting that the network competence of an SME can be a major determinant of the extent of its international, rather than domestic success. In doing so, we further highlight the necessity of entrepreneurial ventures from the Nordic area to engage in business networking in a way that is optimal for their strategy. Firms aiming to internationalize and continue to grow through foreign market operations should commit resources to improving their network competence, and when doing so, should concentrate on how they are able to develop their business network as a whole, rather than to concentrate on developing competence for dyadic business partnerships.

For policy makers, the results suggest several implications. First, as new growth is increasingly sought after not only in the European Union in general, but also in the Nordic and Baltic economies specifically, the results imply that one avenue for beneficial public policy might be encouraging growth through fostering the development of network competence in internationalizing SMEs. As more than 99% of Finnish firms are SMEs but only one tenth and

one third are seeking “rapid” or even “moderate” growth at all (Lindholm et al., 2013), and their importance is crucial for the growth of entrepreneurship and the overall economies in the Nordic and Baltic areas, any indication on the types of organizational capabilities most beneficial to such outcomes should be seen as welcome. Moreover, most of the early-stage entrepreneurs in the Finnish context have very little if any international orientation (Stenholm et al., 2012), and thus public policies fostering the likelihood to seek growth through internationalization are crucial. In light of our results, the most crucial policy implication is that in order to maximize growth among SMEs, fostering networking and competence development among internationally operating SMEs should be prioritized over their domestic counterparts. This would help steer the optimal use of public resources from the point of view of the policy makers.

Our present study naturally also contains some limitations. For one, we have examined the growth metrics and level of competence across a set of SMEs through a cross-sectional study. While the financial statements updated for 2010 provide a somewhat larger time frame of six years when measuring the long-term growth of SMEs, balance sheets are naturally backward-looking, and while the results obtained through using them as dependent variables do provide some evidence for longitudinal growth, a time frame between 2004 and 2010 does not necessarily indicate the effect of network competence on growth to be all-encompassing. In addition, the level of network competence measured was still static, as measured in the 2008 survey. Thus, how the longitudinal development of network competence and its dimensions affect SME growth could still be studied in more detail, via e.g., a follow-up survey. Moreover, we note that there are many ways to measure growth, as there are ways in which firms organically grow; these can include e.g., mergers and acquisitions, contract manufacturing and subcontracting, to name but a few. Thus, our measurement through assets and sales is only one way to examine growth, and network competence may also be related to specific types of network relationships – and thus, organic growth through specific means. Widening this view on what constitutes the growth of SMEs and how it should be measured thus presents an area of further study.

Similarly, through the cross-sectional survey this study could not investigate the internationalization process of Nordic SMEs processually, and therefore in this study we have not addressed topics such as whether the internationalization process of the SMEs has tended to be linear or non-linear (cf. Vissak and Francioni, 2013) or to follow specific export patterns (cf. Vissak and Masso, forthcoming). Moreover, we have highlighted the influence of network competence on growth of internationally operating SMEs in general, and have not distinguished

between different host-country markets entered by the SMEs or the effect of institutional forces and regulation on their market selection. These issues could also be included in further analysis in the future, as small domestic markets and the European Union may potentially guide the market expansion firms from the Nordic/Baltic area (see Vissak et al., 2008), and some expansion targets, such as Russia, may require SMEs to accrue additional country-specific knowledge (Meyer and Skak, 2002).

Firms from additional industries might be included, and a larger sample size might enable industry-specific analysis. However, we suggest that the main result of this study – that being able to develop and manage network relationships across business relationships is linked to increased growth among internationally operating SMEs, could be helpful for the Finnish economic environment in particular, and in the Nordic area in general. As Johannisson and Mønsted (1997) have noted, personal networking may not be enough for sustained growth of Nordic firms, organizing entrepreneurial networking events may not be sufficient from the point of view of public policy. Instead, local SMEs should be encouraged to assess their strategic goals and focus their business networking accordingly; if internationally operating high-growth SMEs are desirable from the societal point of view – as in our opinion they certainly are, at least in Finland and in the Nordic context – then these companies could be aided in their quest by enabling them to develop network-related capabilities such as network competence. It follows, then, that as such capability development may take time and accrue resources from the already resource-challenged SMEs, the government could concentrate the financial support of SMEs to those companies with stated international growth aspirations.

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Table 1. Descriptives and intercorrelations of the variables.

Variable	1	2	3	4	5	6	7	8
1. Relationship-specific network competence (RSS)								
2. Cross-relational network competence (CRR)	0.74**							
3. Firm size [number of employees]	0.15*	0.07						
4. Firm age [years]	-0.00	-0.06	0.24**					
5. Sales growth [€, 2004-2010]	0.20*	0.23*	0.48**	-0.22*				
6. Asset growth [€, 2004-2010]	0.02	0.27**	0.23*	-0.19*	0.60**			
7. Firm type [Asset and sales growth 2004-2010=1, other=0]	0.18	0.18	0.08	-0.18	0.65**	0.65**		
8. Industry [knowledge-intensive=1, other=0]	0.02	0.10	-0.14*	-0.36**	0.13	0.06	0.16	
Mean	4.47	4.14	47.03	26.90	32.78	20.45	0.63	0.44
Std. deviation	1.41	1.31	130.59	21.16	65.14	37.98	0.48	0.50

**p<0.01, *p<0.05

Table 2. The results of the linear regression models testing for magnitudes of growth.

	Sales growth per employee								Asset growth per employee							
	International firms				Domestic firms				International firms				Domestic firms			
	RSS model		CRR model		RSS model		CRR model		RSS model		CRR model		RSS model		CRR model	
	β	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
RSS	0.14	0.85			0.17	1,34			0.06	0.32			0.05	0.43		
CRR			0.36	2.34*			0.13	1.02			0.48	3.06**			0.18	1.45
Firm age	-0.27	-1.57	-0.29	-1.82	-0.06	-0.41	-0.05	-0.40	-0.20	-1.09	-0.24	-1.51	-0.21	-1.56	-0.20	-1.55
Industry (1 = Knowledge-intensive, 0 = other)	0.28	1.63	0.25	1.58	-0.41	0.62	0.08	0.62	0.03	0.15	-0.01	-0.07	0.06	0.46	0.05	0.37
adj. R ²	0.11		0.24		-0.00		-0.00		-0.05		0.19		0.01		0.04	
F	2.37		4.29*		0.94		0.69		0.47		3.67*		1.23		1.96	

**p<0.01, *p<0.05

Table 3. Results of the binary logistic regression model testing for the difference between growth firms and others.

	International				Domestic			
	RSS model		CRR model		RSS model		CRR model	
	B	Wald	B	Wald	B	Wald	B	Wald
RSS	0.01	0.00			0.03	0.02		
CRR			0.92	4.51*			0.03	0.02
Industry (1=K-I, 0=other)	-0.63	0.73	-0.84	0.31	-1.09	3.70	-0.88	2.32
	df = 2, Chi-sq.= 13.43, p= 0.062, -2 log likelihood =46.36, Cox and Snell = 0.02, Nagelkerke = 0.03, 60% correctly classified		df = 2, Chi-sq.= 6.50* , p= 0.039, -2 log likelihood =40.62, Cox and Snell = 0.17, Nagelkerke = 0.23, 77% correctly classified		df = 2, Chi-sq.= 4.45, p= 0.108, -2 log likelihood =80.03, Cox and Snell = 0.07, Nagelkerke = 0.09, 65% correctly classified		df = 2, Chi-sq.= 3.04, p= 0.219, -2 log likelihood =83.15, Cox and Snell = 0.44, Nagelkerke = 0.06, 66% correctly classified	

Dependent variable: increased sales and assets 2004-2010 (1=yes, 0=no), *p<0.05

Table 4. The results of the post-hoc tests on magnitudes of growth.

	Sales growth 2004-2010				Asset growth 2004-2010			
	RSS model		CRR model		RSS model		CRR model	
	β	t	β	t	β	t	β	t
RSS	0.16	1.76			0.11	1.22		
CRR			0.22**	2.58			0.24**	2.66
Firm size (1 = medium, 0 = small)	0.55**	6.03	0.56**	6.25	0.48**	4.95	0.48**	5.21
Firm age	-0.10	-1.01	-0.10	-1.11	0.01	0.06	-0.01	-0.05
Firm type (1 = international, 0 = domestic)	-0.01	0.08	-0.00	-0.04	-0.05	-0.50	-0.05	-0.54
Software Industry (1 = yes, 0 = other)	-0.05	-0.36	-0.07	-0.58	0.01	0.07	-0.03	-0.28
KIBS Industry (1 = yes, 0 = other)	-0.01	-0.01	-0.03	-0.29	-0.01	-0.04	-0.03	-0.25
Metal Industry (1 = yes, 0 = other)	-0.10	-0.85	-0.11	-0.95	0.02	0.90	-0.00	-0.01
Furniture Industry (1 = yes, 0 = other)	0.05	0.45	0.05	0.47	0.09	0.78	0.08	0.73
adj. R ²	0.28		0.30		0.18		0.28	
F	5.79**		6.56**		3.79**		4.77**	

**p<0.01, *p<0.05

Appendix 1: Network Competence Scale Items.

Cross-relational network competence (CRR):

- We evaluate the way our relationship with each partner helps our relations with other partners.
- We evaluate the way the results of collaboration with each of our partners fit together.
- We compare our partners in terms of their technical knowledge.
- We share the same goals with our partners.
- We initiate meetings and discussions among those in our firm involved in relationships with our partners.
- We assign people to each relationship with our partners.
- We coordinate the activities involved in different relationships with our partners.
- We assess how much effort our people put into relationships with partners.
- We monitor the extent to which relationships with our partners work to our advantage.

Relationship-specific network competence (RSS):

- We search actively for new partners.
- We visit potential partners in order to get to know them
- We exchange confidential information with our partners.
- We inform others in our firm about the requirements of our partners.
- We put people from our partners in contact with key people in our firm.
- We put people in our firms in contact with key people from our partners.