Networking as a tool for competitive advantage
- Evidence from Swedish new ventures

Sari Roininen
Networking as a tool for competitive advantage

- Evidence from Swedish new ventures

Sari Roininen
THESIS FOR A DOCTORAL DEGREE

This thesis consists of an introductory text summarising the chosen theories, methodological issues, empirical analysis and results, and a final discussion, all based on the five appended papers presented blow:


Paper 4: Roininen, S. ‘Network capability as means for improved entrepreneurial strategy among young ventures’. Manuscript submitted for consideration to a peer-reviewed academic journal.

Abstract

The purpose of this thesis is to increase our understanding of factors influencing new venture performance, and ultimately survival. The focus of this research is to study how network relationships, and a new venture’s ability to initiate, develop and utilise the relationships affect a firm’s entrepreneurial strategy (here defined as the firm’s entrepreneurial orientation) when seeking competitiveness. If a new venture is entrepreneurially oriented, then it would be more innovative, proactive and risk-taking, which in turn would improve its performance. By utilising network relationships, a new venture can obtain access to vital resources, capabilities and information missing in the firm, resulting in entrepreneurial opportunities. Moreover, by being good at identifying and managing the relationships the new venture should achieve more from its relationships. As a result, in this study it is hypothesised that a new venture’s network structure and its network capability should increase a firm’s entrepreneurial orientation, and its performance. However, contextual factors such as a new venture’s internal and external complexity are alleged to moderate the link between a firm’s entrepreneurial orientation, its network structure and its network capability, and venture performance. This means that the more complex a new venture is, the more it should benefit from the employment of an entrepreneurial orientation and by networking.

To test these assumptions, a survey study has been conducted among Swedish new ventures and the results contribute both to the scientific field, to entrepreneurs in the process of establishing a new venture, and practitioners supporting new ventures. First, this study confirms that network structure and network competence are facilitative of a new venture’s entrepreneurial orientation. In other words, engaging in network relationships and having an ability to initiate, develop, and utilise these relationships early in a firm’s development will increase a new venture’s innovativeness, proactiveness and risk-taking. Second, this study also supports prior research that an entrepreneurial orientation increases firm performance. Hence, by acting more entrepreneurially when entering a (new) market, a new venture increases its performance. Finally, considering the new venture’s degree of complexity, this study did not find any moderating effects. However, both internally and externally complex ventures used more entrepreneurial orientation, network capability and network relationships to improve their competitiveness and performance. Venture complexity can thus be an important factor to take into consideration when the entrepreneur/s, or supporting actors, strive for high performing ventures and increased firm survival.
Sammanfattning


Acknowledgment

I would like to express my sincere gratitude to many people whose help has made this research process possible. First, I would like to thank my supervisors Professor Håkan Ylinenpää and Dr Mats Westerberg for their professional support in commenting and giving constructive critique which have developed my knowledge in both conducting scientific research as well as in reporting the results.

To accomplish this journey to a doctoral degree can be likened to a car race. It has been a pleasant ride although it has consisted of ups and downs, setbacks and successes, breakings and stepping on the gas. I have to admit that many times I have wanted to accelerate in the curves just to get to the finish line faster. At those times, Håkan has stepped out waving a flag showing me to slow down and drive the correct way around in order to get to the goal safely. This has sometimes felt frustrating, but patient and persistent as he is, his trouble has paid off. I now understand the significant of getting every detail right along the way and up to the finish line. Mats has often been my co-driver, sitting beside me, calmly explaining and teaching me how important it is to describe every little detail along the way to avoid becoming stuck in the ditch. In other words, these gentlemen have taught me the importance of being thorough and detailed when I want to explain the effects of my research, as well as how via different methods, especially the statistical, I can explore and map my route. Thank you for your wisdom and patience.

I would also like to thank Johan Johansson, Daniel Örtqvist, Joakim Wincent, Sara Thorgren and Vinit Parida from the unit of Entrepreneurship who have cheered me on from the roadside. They have shared their thoughts and given me many sensible words on my way. Another important person is Dr. Einar Lier Madsen from Nordland Reserch in Bodø, Norway, who has, as an opponent on my pre-seminar, given me much good advice and constructive critique resulting in an improved thesis. Thank you Einar! I also want to state my appreciation to Långmanska Företagarefonden, Sparbanksstiftelsen Norrbotten, and the participative new ventures which have made this research possible. Finally, I want to thank my parents, my children, my friends, and all you other people that I have not mentioned, for your variety of support. Without all you guys this would not have been the pleasant trip that it has been.

Luleå, November 2008

Sari Roininen
Förord

Det finns många personer som jag skulle vilja tacka för deras värdefulla stöd under min tid som doktorand. Framförallt vill jag tacka mina handledare professor Håkan Ylinenpää och Ekonomie doktor Mats Westerberg för deras professionella stöd i att ge konstruktiv kritik, kommentera och utveckla både mina kunskaper i att forska och att förmedla min forskning vetenskapligt.

Att fullfölja denna resa fram till en doktorsexamen skulle kunna liknas vid ett rally. Det har varit en kurvig väg med uppgångar, nedgångar, motgångar, medgångar, och gasande och bromsande. Jag kan erkänna att jag många gånger har velat både gasa och gena i kurvorna för att komma fram fortare, men då har framför allt Håkan stått där och viftat med sin flagga och bett mig sakta ner för att köra den korrektta vägen runt och säkert komma fram i mål. Detta har ibland för mig känts frustrerande, men med sitt tålamod och sin envishet har hans möda gett utslag och jag förstår numera vidden av att framföra min väg till målet så utförligt som det är möjligt. Mats har ofta suttit vid min sida och agerat kartläsare. Han har lugnt och sansat förklarat och lärt mig hur viktigt det är att korrekt beskriva varje detalj i ens färdväg för att inte hamna i diket. Med andra ord har jag lärt mig Vikten av att vara grundlig och detaljerad när jag förklarar vad jag vill åstadkomma med min forskning och hur jag med hjälp av olika metoder, speciellt den statistiska, kan utforska och kartlägga resultaten. Tack ska ni ha båda två för er visdom och ert tålamod.


Luleå, november 2008

Sari Roininen
Part One

Table of contents

1. Introduction .................................................................................................................... 1
   1.1 Research focus and importance ................................................................. 1
   1.2 Research problem and some initial definitions ........................................ 2
   1.3 Purpose and research questions ..................................................................... 5
   1.4 Structure of the thesis .................................................................................. 6

2. Theoretical framework ............................................................................................... 7
   2.1 Improved competitiveness and firm performance ...................................... 7
   2.2 Entrepreneurial orientation ......................................................................... 10
   2.3 Networking activities .................................................................................... 12
      2.3.1 Network structure ................................................................................ 13
      2.3.2 Network capability ............................................................................... 14
   2.4 Venture complexity ......................................................................................... 16
      2.4.1 Prior research on complexity ............................................................... 17
      2.4.2 The complexity of new ventures ......................................................... 18
   2.5 Summary of the chapter ................................................................................ 20

3. Research methods ...................................................................................................... 21
   3.1 Scientific point of view ................................................................................ 21
   3.2 Overall research design ............................................................................... 22
      3.2.1 Qualitative and quantitative considerations ....................................... 23
   3.3 Literature review .......................................................................................... 24
   3.4 Data collection ............................................................................................... 24
   3.5 Measurements ............................................................................................... 26
   3.6 Data analysis .................................................................................................. 27
   3.7 The research process and the papers .......................................................... 28
   3.8 Validity and reliability of this study ............................................................. 31
   3.9 Limitations ..................................................................................................... 33

4. Description of findings in appended Papers .......................................................... 35
   4.1 Paper 1 .......................................................................................................... 35
   4.2 Paper 2 .......................................................................................................... 36
   4.3 Paper 3 .......................................................................................................... 36
   4.4 Paper 4 .......................................................................................................... 37
   4.5 Paper 5 .......................................................................................................... 39
4.6 Summary of findings........................................................................................................40

5. Discussion, conclusions and implications ........................................................................43
  5.1 The effect of network structure...........................................................................43
  5.2 The effect of network capability.........................................................................45
  5.3 The effect of venture complexity.........................................................................46
  5.4 A summary of new venture performance...........................................................47
  5.5 Academic spin-offs – a specific type of complex ventures.................................48
  5.6 Theoretical contributions..................................................................................49
  5.7 Practical implications..........................................................................................50
  5.8 Suggestions for further research..........................................................................52

References........................................................................................................................................55

Appendix A. Accompanying letter in Swedish.................................................................63

Appendix B. Questionnaire in Swedish...............................................................................64

Appendix C. Accompanying letter in English.................................................................72

Appendix D. Questionnaire in English...............................................................................73

Part Two (Appended papers)


Paper 2. The relation between network competence, network structure, strategy and new venture performance.

Paper 3. Start-ups’ achievement of competitive advantages through network relations.


Paper 5. Network structure and networking capability among new ventures: Tools for competitive advantage or a waste of resources?
Part One
1. Introduction

In this chapter, I shall first present the importance of the studied topic and then describe the research problem more thoroughly. This part also introduces some definitions that are important for this research. The discussion will be concluded with the research purpose and research questions, and finally, a brief structure of the thesis will be presented.

1.1 Research focus and importance

Entrepreneurial ventures are widely seen as a major engine of economic growth due to their ability in recognising and exploiting new opportunities. Nonetheless, few new ventures are started in Sweden (Davidsson & Henrekson, 2002) and barely 60% of these companies survive longer than three years (ITPS, 2006). The Swedish Agency for Economic and Regional Growth (Nutek) supports Swedish industry and commerce to constantly develop and renew the enterprises with the intention of maintaining sustainable economic growth in Sweden. To be able to achieve this economic growth, Nutek states that the ‘Swedish business policy needs to face up to a number of important challenges.’ Two of the suggested challenges consider 1) the proportion of entrepreneurs in Sweden, which is low compared to other EU countries, and thus needs to be increased, and 2) the need for more growth in already established businesses contributing to increased employment (Nutek, 2008). This situation is, however, typical not only for Sweden. Results from the recent GEM study (Bosma, Jones, Autio & Levie, 2008) indicate that early-stage entrepreneurial activities1 are low in high-income European countries, whereas they are significantly higher in e.g. Latin American countries. These results can however be the effects of many different circumstances, and thus many researchers have been interested in studying underlying factors affecting new and young venture performance in order to find critical factors influencing firm performance and survival.

The drivers for economic growth, and the key to national competitiveness, has in the last two decades, shifted from labour and capital to knowledge and human capital (Landström, 2008; OECD, 1996). Information, and knowledge, is now seen as a strategic resource where human resources are the vehicle for transforming knowledge into economic competitiveness (Chen, 2008). In this respect, the entrepreneurial firm becomes important since, e.g. by combining R&D results with other production factors, it converts knowledge into economic growth (Landström, 2008). In addition, there has been great pressure on companies to create value and so ensuring the existence and further

---

1 By early-stage entrepreneurial activities, the authors mean the proportion of adult people who are ‘involved in entrepreneurial activities as a nascent entrepreneur or an owner-manager of a new business’
development of the firms (Quélin & Duhamel, 2003), which requires them to focus on activities that create competitive advantage (Alexander & Young, 1996). In other words, it is not only the resources employed in firm establishment and development that matters, but also how the firm makes use of those resources. It is thus important for e.g. a new venture becoming established in a (new) market to have a functional and preferably superior strategy, beyond its product offering, as a base for building competitive advantages not easily imitated by competitors. For new firms becoming established in the market, both access to in-house resources and capabilities are normally very scarce. A cost-effective and speedy way to overcome these ‘liabilities of smallness’ is to develop cooperation with partners outside the firm. A report from the Organisation for Economic Co-operation and Development (OECD, 1996) showed that knowledge networks consisting of heterogeneous firms are becoming more important for economic growth in general. Such networks are similarly argued to be important for a new and young venture’s prospects for attaining competitive advantage and success (c.f. Cooper, 2002; Ireland, Hitt & Vaidyanath, 2002; Granovetter, 1973). How networks, and aspects associated to networking, may be related to performance in new ventures is however only to a limited degree studied in earlier research. This is also the knowledge gap that this study aims to fill: to more thoroughly investigate the link between a new venture’s engagement in network activities and its competitive performance.

1.2 Research problem and some initial definitions

From a resource based view (RBV), a firm’s sustainable competitive advantage is dependent on its resources (c.f. Barney, 1991; Wernerfelt, 1984; Penrose, 1959). New ventures are, however, known for their liability of newness (Baum, Calabrese & Silverman, 2000; Stinchcombe, 1965) and their limited in-house resources. This might be most notable in innovative and high-technology or knowledge-intensive firms. Hence, if a new venture is, from an RBV point of view, seen as a bundle of in-house resources, then this venture is restricted in its capability to build competitive advantages. To overcome this problem, Cooper (2002) and Lee, Lee and Pennings (2001) suggest that a new venture should engage in collaboration or exchange with external network contacts. Many new and good ideas are created in networks of heterogeneous firms (Burt, 2004) increasing a new venture’s entrepreneurial opportunity. Through diverse relationships, a new firm can obtain scarce and specialised knowledge, competencies, and resources complementing or compensating their own limited in-house resources and competencies (Cooper, 2002; Adler & Kwon, 2002; Baum et al., 2000). Ultimately, these relationships may result in unique competitive advantages that improve the firm’s performance (Watson, 2007; Davidsson & Honig, 2003; Lee et al., 2001). A new venture can thus, through its partners, seek and obtain access to scarce or complementary resources to be established in a market and to obtain competitive advantages. This relationship
was also manifested in the study of new ventures by Roininen (2006), revealing that new ventures’ start-up processes and establishment in a (new) market were significantly affected by their access to resources. As a result, a suitable network structure - which is here defined to include all of a venture’s relationships and the content of those ties (i.e. the strength and trust within each tie) - should thus, similarly to older established firms, enhance a new venture’s competitive performance and, eventually, its likelihood of survival.

However, barriers may exist for new ventures in their efforts to build such networks. Obtaining competitive advantage through network relationships may not only depend on what partners the venture cooperates with, or which resources or capabilities the partners possess. A prerequisite to be able to exploit the benefits of a network structure is that a venture has an ability to initiate, develop, and utilise their business relationships, namely to hold a sufficient network capability (Walter, Auer & Ritter, 2006). Firms with earlier collaboration experiences have been found to improve their performance through subsequent cooperation with others (Walter et al., 2006; Kale, Dyer, & Singh, 2002; Anand & Khanna, 2000). Although it is important to collaborate with partners, prior research has mainly focused on already established relationships, and thus knowledge concerning the dynamic aspect of finding and initiating new relationships is missing. Focusing on only established and well-known relationships could however ultimately result in a sacrifice of possible cooperation with other important partners that would enhance entrepreneurial opportunities (Kim & Aldrich, 2005). As a result, possessing a network capability, here defined as a capability to initiate, develop and utilise new and established network relationships, should be important for new ventures to facilitate a desired network structure for improving the venture’s performance and ability to reach customers.

Interacting with customers and thereby obtaining competitive advantages is, similar to other firms, highly important for new ventures (Lindholm Dahlstrand, 2004; Deakins, 1999). For new ventures, timing and first mover advantages could be essential (Lee et al., 2001), as well as their strategic decisions on how to reach a market and become established. Such entrepreneurial behaviour or entrepreneurial strategies have in recent research (Miller 1983; Covin & Slevin, 1989) been understood as entrepreneurial orientation, where a new venture’s entrepreneurial orientation refers to the amount of innovative, proactive and risk-taking activities that the venture undertakes in its establishment and strategic positioning in a market. Firms being highly innovative, proactive and risk-taking in their entrepreneurial endeavours tend to discover new and differentiating opportunities, thus creating a base for competitive advantages (Wiklund & Shepherd, 2005) and increased performance (Lumpkin & Dess, 1996, 2001). Moreover, high levels of entrepreneurial orientation also facilitate
value creation, particularly among new and young ventures, with external ties providing scarce and valuable resources (Lee et al., 2001). For example, by being innovative and searching for new opportunities in cooperation with partners, the academic spin-offs in Roininen’s (2006) study showed more entrepreneurial orientation than the non-academic start-ups did which only optimised their own resources. In other words, to fully extract the capability to identify, create and exploit entrepreneurial opportunities, a new venture should join networks and thus gain advantages from those relationships.

Although the benefits from networking, as well as the employment of an entrepreneurial orientation, are widely studied, few studies have combined the theoretical concepts of a new venture’s network structure, its network capability and entrepreneurial orientation to investigate how this relates to competitive performance. This study therefore aims to investigate those relations in order to identify important factors that can predict improved firm performance. Each of the three concepts may not by itself be sufficient for predicting the link to improved firm performance. For example, investigating the effect of network structures on new venture performance might not per se explain all of the variance in the ventures’ performances. Therefore the inclusion of a capability to manage those network relationships and the employment of an entrepreneurial strategy or entrepreneurial orientation could provide a deeper knowledge and understanding of what is improving venture performance. Additionally, considering that ventures emanate from different contexts, it should affect how different new ventures use network relationships and network capabilities to improve their entrepreneurial strategy and performance. In other words, different types of new ventures should benefit from different partners holding different complementary resources, information and capabilities in order to be competitive. Similarly, depending on the new ventures’ contexts, they may also need different amounts of network capability to attain improved profitability. Contextual and contingency perspectives emphasising more constructs, besides the well-known dynamic and hostile characteristics of an environment, have therefore been suggested as more accurate in explaining profitability obtained through e.g. employing different degrees of entrepreneurial orientation (Lyon, Lumpkin & Dess, 2000; Lumpkin & Dess, 1996).

An example of a contextual factor influencing and distinguishing new ventures’ start-up processes is the venture’s origin (Roininen, 2006), where knowledge-based new ventures could be regarded as more complex endeavours than ordinary start-ups. The degree of venture complexity could with this perspective by itself act as an influencing factor affecting a new venture’s strategic actions and the utilisation of its networks for improved firm performance. One specific aspect of venture complexity is its degree of routineness. As Abernethy and Brownell (1997) and Perrow (1970) show, the degree of complexity within a
firm’s work tasks, that is the degree of its routineness, affects the way the firm is organised (e.g. the accounting controls of the firm). Similarly, it can be argued that new ventures with different levels of complexity within the firm could vary in their performances. A new venture using unfamiliar methods with great variety within its tasks, i.e. low routineness, might require different resources and capabilities to accomplish its business than a venture with a high degree of routineness. In this thesis, this type of venture complexity is defined as a new venture’s internal complexity. There could also be another degree of complexity among new ventures, which is dependent on the markets that firms target. Ventures could target either an immature market, here defined as a segment of customers not knowing how to use the offered product/service and thus needing some education, or a mature market, consisting of customers that already are aware of the product/service and know how to use it. The target market would in this case constitute another part of a new venture’s degree of complexity, and is in this thesis defined as the new firm’s external complexity. In sum, a new venture’s internal and external complexity might be factors distinguishing their performances and the ways in which they achieve this performance.

There is, finally, an important clarification that I need to make in order to facilitate the understanding and further reading of this research. The context of this study is the ventures’ process of becoming established in a market. In theories on new venture creation processes, firms are involved in this establishment process as well as the further development of the firm (cf. Lindholm Dahlstrand, 2004; Deakins, 1999). The time limit of what constitutes a new firm may thus include a few years following the launch of the firm. In the GEM studies, for example, new ventures are defined as those that have been active for a maximum of three and a half years. In this study the time limit for being categorised as a new venture is three years, because within these years the firm should have experienced the process of becoming established in the market (early growth stage, according to Gailbraith, 1982, and Kazanjian, 1988). New ventures are, in this study, thus not equal only to start-ups, but include all ventures that have been active for a maximum of three years.

1.3 Purpose and research questions
Considering that so many companies do not survive a three year limit and that there are so many different factors that could affect firm performance, I was influenced to investigate more about the factors that could affect new ventures’ competitive performance. A general question that came into my mind was: Why do some new ventures perform better than others? In the problem statement I have argued that new ventures could, by engaging in networks, influence their own competitive performance and ultimately their survival. In order to contribute to the discussion of what factors could improve venture performance, this study aims to combine the concepts of network structure, network capability
and entrepreneurial orientation under different contextual factors so as to achieve a better understanding, and possibly better explanations, for new venture performance. The overall purpose of the research presented in this thesis is therefore to identify network-related factors that can be associated with a new venture's competitive performance. To be able to answer why some new ventures perform better than others, and to provide guidance in my investigation, I have formulated the following research questions:

RQ 1: Which, if any, aspects of a new venture's network structure can be related to its entrepreneurial orientation and competitive performance?

RQ 2: Which, if any, aspects of a new venture's network capability can be related to its entrepreneurial orientation and competitive performance?

RQ 3: What, if any, impact does a venture’s complexity have on the relationship between aspects of a new venture's network structure / capability, its entrepreneurial orientation, and competitive performance?

These research questions have been dealt with in the appended papers, and in the final discussion of this thesis. Each paper explains in more detail which dimensions of network structure, network capability and entrepreneurial strategy are found to be affecting new venture performance.

1.4 Structure of the thesis

This thesis consists of a covering text summarising theories, methods and results from five appended papers, each investigating different parts of my theoretical construct. Hence, I will in the following chapter give a theoretical review which is concluded in a theoretical framework to be used in further discussions. In Chapter 3, the methodological considerations and my research approach are described. Next, in Chapter 4, I will briefly summarise the results of each study presented in the appended papers. I will then conclude with a discussion of my findings, resulting in conclusions and implications for academics, entrepreneurs and practitioners in the fifth, and last, chapter.
2. Theoretical framework

In this chapter, I will describe how new ventures can improve their competitive performance by the employment of an entrepreneurial orientation and engagement in network activities. I will start by explaining my theoretical framework, and then in each following section more thoroughly explain the theories of each of the constructs included in the framework.

2.1 Improved competitiveness and firm performance

Both academics and policymakers have shown great interest in what it is that affects the growth and survival of new and young firms. In prior research it is suggested that entrepreneurial endeavours could depend on the entrepreneur’s personality traits and behaviours (c.f. Baum & Locke, 2004; Shane & Venkataraman, 2000) or his/her education and prior knowledge or experiences (Delmar, Wiklund & Sjöberg, 2003; Shane, 2000). It could also depend on the entrepreneur’s opportunity recognition (Ardichivili, Cardozo & Ray, 2003), or on essential resources such as venture capital (Landström, 1993) and professional advice (Duchesneau & Gartner, 1990). These and other factors are in this study overlooked as being vital for improved firm performance and survival. However, the research in this study will focus on a venture’s entrepreneurial strategy, its networking activities, and its complexity to find additional explanations of other factors that might be of essence for new venture performance.

Studies of improved small firm performance through an entrepreneurial strategy have investigated the main effects of this association. However, Dess, Lumpkin and Covin (1997, p.678) state that: ‘simple relationships may be inadequate to explain the relationship between entrepreneurial strategy and performance’. This was also acknowledged by Lumpkin and Dess (1996), who stressed the importance of taking contingency factors such as the environment into consideration, and was further questioned by Wiklund and Shepherd (2005) who argued that configurational approaches with a three-way interaction taking moderations into account would be better suited to explain performance. Wiklund and Shepherd suggest that both environmental and organisational characteristics together with strategic considerations should be simultaneously measured in small firm performance studies. Some researchers have accordingly investigated environmental conditions (Lumpkin & Dess, 2001), and internal dimensions such as a firm’s access to resources (Wiklund & Shepherd, 2005), as affecting contingency factors concerning the link between a firm’s entrepreneurial orientation and performance. Moreover, Madsen (2007) investigated a firm’s inimitable resources, and Moreno and Casillas (2008) the firm’s business strategies and idle resources, as mediating and moderating factors.
The purpose of this research is, as mentioned, to identify network related factors that can be associated with a new venture's competitive performance. This research will thus contribute to the entrepreneurship science field by incorporating internal and external factors of a firm to the investigation of what influences a venture’s entrepreneurial strategy and its performance. Similarly to prior research, it is in this study also argued that a new venture could improve its competitive advantage and performance by employing an entrepreneurial strategy (i.e. entrepreneurial orientation). When a new venture is about to become established it could by acting in a more risk-taking, innovative and proactive manner increase its competitive performance compared to other actors in the market. This is, as shown in Figure 1, the theoretical framework, illustrated by a link between the entrepreneurial orientation and firm performance. However, as will be explained below, other factors should have an influence on this relationship. In other words, a new venture could increase its entrepreneurial orientation and performance by considering contextual factors. Factors expected to relate to entrepreneurial orientation and competitive performance specially addressed in this study are: network structure, network capability, and venture complexity.

**Figure 1.** A theoretical framework of new ventures’ competitive performance.

First, a new venture’s improvement of its competitive performance could be affected by the firm’s engagement in external relationships. If a new venture with limited in-house resources engages in networks with different partners possessing different resources and capabilities, it should obtain benefits from the network for increasing its competitive advantage and performance. The venture should similarly, via its networks, be able to improve its ability to act...
entrepreneurially, which in turn, as shown by previous research, could be expected to increase the firm’s performance. These assumptions are illustrated in the model by the link between network structure and performance, and the link from network structure to entrepreneurial orientation as a mediating variable to performance.

Additionally, a new venture with many different network relationships should be favoured by capabilities to initiate, develop and utilise those relationships. When a new venture is aware of its partners, has the ability to handle and coordinate those relationships, and to initiate new relationships, it should benefit more from cooperation and thus increase its performance. Similarly, the new venture’s entrepreneurial strategy should be improved by the venture’s network capability. This because having high levels of network capability should facilitate the firm to identify important partners, resources and activities improving its innovativeness, proactiveness and propensity to take risks. In addition, as with network structure, improved entrepreneurial orientation through a network capability should increase the new venture’s performance. Again, these relations are in the framework illustrated by the links between network capability and performance, and the link from network capability through entrepreneurial orientation to performance.

Finally, the linkages between network structure, network capability, entrepreneurial orientation and new venture performance could be moderated by the new venture’s complexity. The more internally and externally complex a new venture is, the better its performance should be by the exploitation of the firm’s network structure, network capability and entrepreneurial orientation. A reason for this could be that an internally complex new venture might, due to its variation in methods and tasks, require more resources and capabilities than it possesses itself and would thus need more relationships, and more capabilities, to manage those relationships, to improve its performance. Similarly, if the new venture targets immature markets, it might need external relationships to a greater extent in order to reach its customers and to awaken an awareness and interest in the firm’s products/services. However, when a new venture has large task variety and employs unfamiliar methods it might be difficult to put an entrepreneurial orientation into useful action since the venture already is complex and is therefore difficult for competitors to imitate. To possess a capability to use networking for handling a high degree of task variety and unfamiliar methods is, in this situation, normally very helpful. Simpler firms are, by contrast, probably easier to imitate and thus their only competitive strategy might be to employ high levels of entrepreneurial orientation. The effect of internal venture complexity on entrepreneurial activities could thus work the opposite way in complex ventures, and may instead be more certain to lead to
higher performance when the venture is relatively simple (Covin & Slevin, 1989).

Following the logic that network relationships, due to the resources accessed, facilitate the improvement of a new venture’s entrepreneurial strategy as well as to increase its performance, the new venture’s ability to initiate, develop and utilise network relationships should affect the venture’s network structure. That is, having high levels of network capability should affect the outcome of what network relationships the venture initiates, how the firm makes use of them, and how many relationships the venture needs in order to act entrepreneurially and to improve its performance. This link is however difficult to investigate without a time dimension that includes a venture’s learning over time, and has therefore not been studied in this research. A new venture’s level of entrepreneurial orientation could also affect the network structure of the venture. Depending on the employment of an entrepreneurial orientation, a new venture might, for instance, need more or less network relationships possessing particular resources and capabilities. However, this link is also difficult to investigate without employing a longitudinal study. It takes time to develop an entrepreneurial orientation (Madsen, 2007; Wiklund, 1999), and thus a time dimension would be needed in order to determine how an entrepreneurial orientation affects the development of a new venture’s network structure. It is easier to think that a venture’s current network structure would increase its entrepreneurial orientation, and I am interested in the mechanism between a new venture’s entrepreneurial orientation and network structure, not the learning dimension. Therefore, I only hypothesise one-way relationships in my theoretical framework between network structure, network competence, and entrepreneurial orientation.

I will hereafter explain each theoretical construct of my framework in more detail so as to provide an understanding of how these constructs can affect the competitive performance of new ventures.

### 2.2 Entrepreneurial orientation

Entrepreneurial orientation is often used as an analogy to firms’ strategic actions within entrepreneurship theory, and is acknowledged to affect firm performance. Lumpkin and Dess (1996) state that a firm’s entrepreneurial orientation emerges from its strategic choices, and thus concerns the processes, practices and decision-making activities a firm undertakes when it e.g. is becoming established in a new or existing market. In other words, employing entrepreneurial orientation implies that a firm ‘engages in product market innovation, undertakes somewhat risky ventures and is first to come up with proactive innovations, beating competitors to the punch’ (Miller, 1983, p. 771). The recent increased interest in entrepreneurial orientation can be understood as
rooted in an ambition to gain a better understanding of firm growth and performance (c.f. Stam & Elfring, 2008; Runyan, Droge & Swinney, 2008; Covin, Green & Slevin, 2006). In a review of prior research examining entrepreneurial orientation dimensions, both Lyon et al. (2000) and Wiklund (1998) have noted that most studies have focused on innovativeness, proactiveness and risk-taking, using Miller’s (1983) original scales of measurement to assess strategic actions for improved competitiveness and performance at a firm level. The many encouraging results achieved are not, however, unchallenged. There are some findings suggesting that entrepreneurial strategies under certain circumstances could be inverted (Tang et al., 2008; Bhuian, Menguc & Bell, 2005), or even associated with poor performance (Hart, 1992). Hence, entrepreneurial orientation may sometimes, but not always, lead to improved performance, indicating that e.g. there could be an optimal level of entrepreneurial orientation under certain circumstances and within different contexts.

In this study, a new venture acts entrepreneurially when it is creative and develops new ideas (i.e. is innovative), is ahead of its competitors with introducing products/services (i.e. is proactive), and takes bold actions to maximise the exploitation of opportunities in uncertain situations (i.e. is risk-taking). To use an entrepreneurial strategy might be very important for new ventures since they are known for their liability of newness and limited in-house resources (Cooper, 2002; Baum et al., 2000; Stinchcombe, 1965). This might be most notable in innovative and high technology or knowledge-intensive firms. Following the resource based view of competitiveness, a firm’s cumulative resources significantly affect the sustainable competitive advantages of the firm (c.f. Penrose, 1959; Wernerfelt, 1984; Barney, 1991), and thus new ventures can be seen as hampered in developing competitiveness. Madsen et al. (2007) point out that research within entrepreneurial orientation lacks a resource perspective to explain entrepreneurial endeavours. Different inimitable or unique resources should be taken into account in entrepreneurial orientation–performance studies, since entrepreneurial orientation and access to relevant resources can enable a firm to exploit unique competencies (Madsen, 2007), hence improving its performance.

When a new venture is to be established in a market, it needs, similar to larger and older firms, to involve itself in strategic thinking in order to create value (Hitt, Ireland, Camp & Sexton, 2002; Roberts, 1991). Strategic thinking is here defined as making decisions about how to achieve competitive advantage through strategic choices (Bowman & Faulkner, 1996). Entrepreneurial orientation has, in prior studies, been treated as a behavioural aspect rather than a strategic feature of a company. In this study, entrepreneurial orientation is, by contrast, treated as a strategy itself (cf. Miller, 1983; Covin & Slevin, 1989) due
to the strategic decisions of being innovative, proactive and risk-taking in the process of establishment in a market. As a result, a new venture can by scanning the market, being innovative and presenting new products/services, act quickly in its response to possible market changes and thus gain advantage over its competitors. A firm with a high level of entrepreneurial orientation could for example be expected to achieve first-mover advantages by targeting premium market segments and charging high prices resulting in a sustainable performance increase over time (Zahra & Covin, 1995).

In view of the above discussion, in this study it is hypothesised that the higher a new venture’s entrepreneurial orientation is, the better its performance would be. However, the three dimensions of a venture’s entrepreneurial orientation, namely innovativeness, proactiveness and risk-taking, are not necessarily dependent on each other (Lumpkin & Dess, 1996), nor interrelated. Instead these dimensions could affect firm performance differently and could individually be affected differently by contextual factors. Additionally, if a new venture lacks vital resources and capabilities to accomplish its entrepreneurial strategy or for improving its performance, the venture could be benefited by networking. I will continue to discuss the influence of networking activities on a new venture’s entrepreneurial orientation and performance in the following sections.

### 2.3 Networking activities

The effects of networking are widely studied and understood to positively affect new and entrepreneurial opportunities (c.f. Granovetter, 1973; Birley, 1985; Burt, 1992; Uzzi, 1999). Since it is time consuming for a venture, especially a new venture, to develop all the resources necessary to successfully commercialise the business idea by itself, the new venture would be facilitated by external contacts holding the scarce and specialised resources needed in order to become established and to grow (Davidsson & Honig, 2003). Prior research has for example showed that engagement in networks could provide ventures with such difficult-to-imitate resources (Yli-Renko, Autio & Sapienza, 2001), increased innovativeness (Ahuja, 2000; Baum et al., 2000), and faster market entry (Walter et al., 2006; Cooper, 2002) resulting in enhanced performance, growth, and survival (Walter et al., 2006; Lee et al., 2001).

However, Madsen et al. (2007) point out that studies of entrepreneurial orientation do not include socially complex resources such as networks to achieve competitive advantage generating higher rents. Entrepreneurial firms often pursue rapid growth even if they do not always possess the necessary resources (Teng, 2007). The alternatives that these ventures have then are to develop their scarce in-house resources, to acquire them through market transactions or acquisitions, or by engaging in strategic alliances. Teng (2007) points to collaboration with other firms as the most beneficial alternative for
resource acquisition, since this arrangement is flexible and allows shared costs and risks. This is according to Powell and Grodal (2005) who state that firms with broad networks of partners achieve contact with a more various range of knowledge, competencies, and experiences, creating an environment that is more likely to result in innovations and new opportunities.

However, individuals’ and organisations’ networks are often homogeneous, where networks consisting of actors with similar backgrounds and interests are more likely to be characterised by a lack of diversity (Kim & Aldrich, 2005); which do not necessarily result in new opportunities or greater innovations. Assuming that a strategic network, or alliance, consists of diverse partners and resources, Teng (2007) then proposes that these inter-organisational collaborations will be used more by entrepreneurial firms (that is firms employing entrepreneurial orientation characteristics). The reason is that collaboration would fill in the entrepreneurial firm’s resource gaps, offer complementary fit between partners, and help to develop first-mover advantages, as well as develop and share tacit knowledge.

A new venture’s engagement in networks could consequently be expected to result in access to vital resources, capabilities and information, so improving the venture’s entrepreneurial strategy and performance. Access to these benefits however depends on the relationships per se, that is the type of contact and the frequency of the relationship, which will be explained hereafter.

2.3.1 Network structure

Achieving competitive advantage and increased firm performance through network relationships would, as mentioned, benefit from diversity among the partners and their resources. Thus, a new venture’s network structure would be highly important for the firm to achieve benefits from collaboration. Network structure is here defined as the pattern of relationships that are created from network contacts and where differential network positions have a crucial effect on the resource flow affecting entrepreneurial endeavours (Hoang & Antoncic, 2003). Thus, if a new venture engages in networking it would be in a better position for finding entrepreneurial opportunities, and achieving access to important strategic information critical to the success of its commercialisation (Mazzarol & Reboud, 2006). Lee et al. (2001) point out four relationships promoting new ventures’ performance; namely, other enterprises, venture capitalists, universities/research institutes, and venture associations. Resources such as financial, technological, physical, and managerial are in turn suggested to be the most important resources to bring into cooperation and alliances (Das & Teng, 1998). Developing formal types of collaborative activities to gain better access to critical resources and having access to board members with well-developed informal business networks (Borch & Huse, 1993) would thus serve
as resource providers to the new venture, and also become bases for increased legitimacy claims. Strategic cooperation or alliances with established companies increases the credibility of a new firm among third parties, such as customers and other interested parties (Lee et al., 2001), and external relationships in the board of directors provides the venture with vital management-related know-how and access to professionals such as venture capitalists (Sapienza, Manigart & Vermier, 1996).

The type of favourable resource, capability or information that the new venture obtains access to through its relationships will however depend also on the strength of the relationships (Granovetter, 1973). New information is more likely to derive from weak ties where the network relationship is not well known and contact between them is infrequent. Strong ties, on the other hand, are more frequent contacts based on trust (Krackhardt, 1992), facilitating the partners to share crucial and confidential information (Nicolaou & Birley, 2003b), which is critical for a new venture to be established. Kim and Aldrich (2005), however, argue that employing only the latter network mode severely limits a venture’s networking prospects. Besides developing and using weak ties, new ventures could obtain competitive advantage by achieving access to a wider network through the frequent relationships they already have. Rather than being limited to a small set of strong ties, a venture can gain new, and sometimes indirect, contacts through their frequent partners’ networks, which is a central reason for entrepreneurship researchers’ great interest in the concept of social networks (Kim & Aldrich, 2005).

To summarise, the influence of a new venture’s network structure (namely the type of partners, resources possessed by the partners, the strength of the ties, and the amount of trust between the firm and the partner) should have a great influence on the venture’s performance when it is being established in a market. The more diversity that exists within a network, the more benefits should result for a new venture’s entrepreneurial opportunities and performance. However, collaborations are not always easy to accomplish. It could be difficult for a firm to find suitable partners to cooperate with, and the interactions could be difficult to manage due to the shared decision-making, need for control, conflicting objectives, and a partner’s possible opportunistic behaviour (Teng, 2007). When engaging in networks, new ventures would therefore be favoured by developing capabilities to utilise and develop those relationships.

### 2.3.2 Network capability

To engage in network relationships per se might not solely increase a new ventures’ competitive performance. If a new venture has many relationships it should be favoured even more from them if the venture has capabilities to initiate, develop and utilise the relationships. Kim and Aldrich (2005, p. 3)
suggest, ‘Cultivating and maintaining valuable relationships through one’s social network requires skills that cannot be generated by habitual social behaviour’. The authors further point out that most individuals and organisations often have few strong ties but many weak ties. Weak ties are however more difficult to manage since those relationships lack reciprocated interaction and are thus difficult to e.g. keep informed for further cooperation.

To benefit from network relationships, a firm might need to have an ability to develop and manage multiple relationships, using appropriate governance mechanisms, sharing routines, and initiating necessary changes in the relationships (Dyer & Singh, 1998). This ability is, by Walter et al. (2006), called network capability. According to those authors, a firm’s network capability consists of four dimensions: 1) the ability to coordinate between collaborating firms, 2) knowledge of their partners, 3) relational skills with other firms and, 4) internal communication skills. When a venture engages in networks it is required to be able to coordinate inter-organisational activities connecting the participating firms into a network of mutually supportive interactions (Walter et al., 2006). Thus the firm needs to manage and monitor those partners and activities in order to determine whether there are conflicting or overlapping partners or activities (Kale et al., 2002). In addition, the firms need to be aware of potential partners, as well as suppliers, customers, and competitors, and their capabilities, requirements, and trustworthiness (Walter et al., 2006; Gulati, 1999). This awareness, called partner knowledge, is a precondition for enabling effective coordination between business relationships. When a venture has business exchanges with its partners it is required to have good relational skills. Walter et al. (2006, p. 547) state, ‘A manager has to perceive and adapt to a variety of social situations, responding to a broad range of information and social stimuli from inside and outside the organisation.’ In addition, if a new venture wants to obtain efficiency from their networking activities, it needs to be open, responsive and learning within partnerships (ibid.). In other words, the venture needs to have internal communication skills, that is, to integrate and coordinate knowledge throughout the firm and thereby generate feedback from prior as well as ongoing collaboration experiences (Kale et al., 2002). However, internal communication skills might be difficult to practice in new ventures, since many of such firms have no more than one or two employees at the beginning. The learning experience thus often resides within the owners or managers of the venture.

What prior studies of network capability lack, is a dimension that recognises a firm’s ability to initiate new network relationships. In this study it is believed that an ability to build new relationships is equally important for new ventures to attain competitive advantages as their established relationships are. New partners are in network-based theories acknowledged to provide new ideas and
resources that increase a venture’s competitive performance. Westerberg and Wincent (2008), for example, state that a new and small venture’s entrepreneurial orientation is significantly enhanced by building new relationships, and Nohria and Garcia-Point (1991) argue that ventures facing high levels of technological change and increasing market uncertainty attain improved performance by forming ties with new partners possessing capabilities to manage those problems. A venture with lack of insight into which new relationships to pursue may leave the firm with only bounded rationality rather than hyper-rationality (Kim & Aldrich, 2005), and thus the firm could forfeit potentially valuable relationships that would result in new opportunities. If new ventures only cooperate with existing and known partners, they could consequently miss the possibility of bringing other new and important partners into the network and so enhancing the entrepreneurial opportunity. Therefore this fifth dimension, namely to be open to and to initiate new relationships, is added to a new venture’s network capability.

These components are argued to support each other, increasing the magnitude of a venture’s network capability as the components increase in effectiveness (Walter et al., 2006). When a new venture engages in networking, its capability to initiate new relationships, together with good partner knowledge and relational skills might increase the venture’s propensity for taking larger risks and acting innovatively in a joint search for competitiveness. Moreover, having good internal communication could be the ultimate ability for the venture to learn and understand how to jointly recognise opportunities and increase both the entrepreneurial strategy and performance. In addition, knowing your partners’ possibilities, and having good relational skills and the ability to coordinate partners into supportive interactions could be prerequisites for the new venture to act more proactively in developing its competitiveness. Finally, having good partner knowledge and initiating new relationships could furthermore avoid a new venture being caught in relationships that do not add to its competitiveness and performance. Research investigating each of the network capability dimensions among new ventures could increase the understanding of how these companies can exploit entrepreneurial opportunities, and survive, through networking.

2.4 Venture complexity
Contextual factors, as already noted, could influence a new venture’s benefits from networking and the employment of an entrepreneurial strategy. Different levels of complexity within a new venture might require different activities and strategies for a new venture to be established in a market. These differences might have a significant influence on the link between a new venture’s entrepreneurial orientation, network activities, and its performance. As Senge (1992), among others, argues, complexity can be tied to the concept of a system,
i.e. a set of interacting or interdependent entities forming an integrated whole, where complexity expresses the condition of the entities or the structure of the relationships between the entities. Hence, complexity arises from how factors, or units, that are interdependent of each other in a defined system, as well as its underlying patterns, can enhance understanding of, e.g. human processes such as decision-making and change. This motivates a more thorough discussion of the concept itself, and how it has been used in prior research.

### 2.4.1 Prior research on complexity

Complexity has always been a part of our environment and has thus been of great interest in various scientific fields. The *behaviour* of a complex system has been important within e.g. social science, where a system can be viewed as an organisation consisting of *interacting components*, which are carriers of several *complex processes* and *organisational structures* (c.f. Senge, 1992). Several researchers have thus emphasised the importance of complexity due to its effect on organisational coordination, control, communication and innovativeness. Abernethy and Brownell (1997) and Perrow (1970) for instance determine a venture’s complexity by its degree of routineness, i.e. the extent of well-known techniques used for handling tasks and the variety within the tasks employed by the firm. Similarly, the organisations’ *product development* is also regarded as complex, since the product development process is highly variable and thus often requires that the activities to be performed be determined in advance (Jun, Ahn & Suh, 2005).

A more difficult measurement of complexity is related to organisational strategies. Mintzberg (1979) highlights the importance of recognising the concept of complexity in management literature. He found that when the *environment* in which organisations act is complex and constantly changing, organisations tend to respond by becoming even more structurally complex. Moreover, Miles and Snow (1978) state that organisations could have different *business-level strategies* where the organisations act proactively or reactively to different degrees in their market approach. Porter (1985), on the other hand, argues that business-level strategies in terms of overall cost leadership, differentiation, and focus create and sustain different competitive advantages. These strategies could result in different levels of venture complexity, since differentiation for instance might require more advanced activities and resources, and more specific production technologies than cost leadership would.

Finally, complexity can also occur within ventures’ markets. A firm’s profitability relies primarily on choosing the right industry and positioning its products in the right markets within the industry: so called *product-market positioning* (Afuah, 2003). Moreover, markets can be immature, meaning that
customers are unaware of a venture’s offerings, or they can be mature where customers know exactly what the offering is and how to use it. Narver, Slater and MacLachlan (2004) argue that ventures can choose to target either of these markets, but different approaches are needed to reach out to them, i.e. proactive and reactive market orientations. In addition, ventures can target markets of different location. Targeting an international market might be more complex than targeting a local market, since effective competition in an international market often requires networks and alliances to obtain access to information, customers and necessary resources and capabilities (Wincent & Westerberg, 2006; Hitt et al., 2002), and can thus be considered as a more complex task.

These various dimensions of complexity are similar to von Stamm’s (2003) components of an organisation’s contextual complexity. She suggests that various elements such as technology, skills, processes and markets are important elements affecting a particular company’s ability to manage innovations. Much of the prior research on complexity has however been carried out among large and established firms, but the consequences of different dimensions of complexity should also apply to new ventures, since those companies, just as other companies, face environmental, structural, and developmental issues.

2.4.2 The complexity of new ventures

New ventures in general face several constraints, but more so if they are focused on creating a new market or a niche within an established market (Cooper, 2002). Therefore, many decisions concerning the organisation’s structure, product offerings, target customers and business strategy have to be made. Singh (1997, p. 339) also argues that ‘businesses developing products of high technological complexity face a higher risk of failure than businesses developing less technologically complex products’. This, he means, depends on two things. First, these companies often have limited abilities to develop all the specialised competencies and routines needed to manage several and closely coordinated components of a complex technology. Second, commercialisation of a highly complex technology often results in higher organisational cost due to the complicated management, recruitment and operation of the many different components, subsystems and interactions that such activities require.

Similarly, recent studies on new venture performance and survival have also shown that complexity within a venture’s technology, capabilities and resources, and organisation affects new venture performance or outcome. For example, Lichtenstein, Carter, Dooley and Gartner (2007) investigated the emergence of organisations from an approach grounded in complexity science. They found that the degree of interactions between system components affects the creation of new ventures, where the activities leading to the emergence of new businesses are independent and non-linear. Lichtenstein et al. argue that too low
concentrations of interactions result in an absence of novelty whereas too high concentration of interactions result in complexity catastrophe, both options leading to low likelihood of new venture survival. Thus, new ventures need to find a balance between these extremes. Similarly, Auerswald (2008) found that technological and organisational complexity of production, that is, high or low technology and complex or simple organisation, affected the existence of a firm. Possessing complex capabilities, in terms of developing a venture’s various resources, facilitates a firm’s innovativeness, whereas developing its market orientation facilitates its financial performance (Paladino, 2007).

Complexity is thus in this study seen as an important factor affecting critical challenges in new venture development, such as their strategic activities and resource configuration, which in the end affect firm performance. New ventures with a number of inter-dependent routines, technologies, and other firm-specific resources linked to a particular knowledge asset, are assumed to be more complex than other firms for two reasons. First, building on Abernethy and Brownell’s (1997) and Perrow’s (1970) degree of routineness within the work tasks, a new venture using unfamiliar methods with a large degree of variety within the tasks is considered as a complex venture due to its low routineness. Second, new ventures targeting immature markets with latent needs requiring customer education (Narver et al., 2004) to enable the use of the product/service are also considered more complex due to the specific activities the ventures’ need to undertake in order to accomplish the task. In this study, the degree of routineness is referred to as a new venture’s internal complexity, whereas the degree of market maturity is referred to as its external complexity.

For example, a complex new venture’s process to become established in a market, introducing a new or intricate technology or business concept, would necessitate a variety of tasks and unfamiliar methods, i.e. low degree of routineness. In addition, due to the novelty of the venture’s offerings on such immature markets, the customers are often unaware of the function and usage of the product or service offered. As Bessant and Tidd (2007, p. 343) state, complexity is one characteristic of innovation, and as such ‘complexity is the degree to which an innovation is perceived as being difficult to understand or use […] Innovations which are simpler for potential users to understand will be adopted more rapidly than those which require the adopter to develop new skills and knowledge’. Hence, in this study it is believed that both internal (i.e. the degree of routineness within the venture) and external (i.e. the degree of market maturity) venture complexity will influence the link between a new ventures’ network structure and firm performance, as well as the link between its network capability and firm performance positively. This is because a complex venture might achieve more from its network relationships in helping the firm to become established. Complex ventures might, on the contrary, not improve the firm
performance from higher levels of entrepreneurial orientation since those actions might complicate the performance of an already complex new venture.

2.5 Summary of the chapter

The theoretical perspectives of this research have been described in this chapter in order to highlight the problem statement of new ventures’ possibilities to improve their performance, and ultimately their survival.

Table 1. Research questions, main theories and assumed relations.

<table>
<thead>
<tr>
<th>Overall purpose:</th>
<th>To identify network-related factors that can be associated with a new venture's competitive performance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical perspectives</td>
<td>Entrepreneurial orientation (EO)</td>
</tr>
<tr>
<td>Research questions</td>
<td>Which, if any, aspects of a new venture’s network structure can be related to its entrepreneurial orientation and competitive performance?</td>
</tr>
<tr>
<td>Assumed relation</td>
<td>EO increases PERF</td>
</tr>
</tbody>
</table>

Table 1 illustrates how the theoretical perspectives presented above relate to this study’s overall purpose and research questions, and how the theoretical concepts are assumed to affect new ventures’ competitive performance. The link between firm performance and entrepreneurial orientation is already acknowledged to be mainly positive and is thus accordingly assumed in this study as well. The focus in, and contribution of, this study is to identify network related factors, that could be linked to new ventures’ entrepreneurial endeavour and performance, which could be affected by venture complexity. The research questions and assumed relations between the concepts is investigated and reported in detail in the different appended papers of this thesis, and in summary in Chapter 4.
3. Research methods

In this PhD project, both theoretical and empirical work has been crucial to obtaining an understanding of how new ventures obtain competitiveness and perform well. I will hence in this chapter present the methodological approaches that I have taken to realise this research. I will also discuss my philosophical positioning which has affected many of the choices I have made throughout my research process.

3.1 Scientific point of view

Scientific work, such as this doctoral thesis, is expected to be objective and truthful when researchers’ search for answers to questions that can explain various functions in the real world. Hair, Money, Samouel and Page (2007, p. 5) state that ‘business research is a truth-seeking function that gathers, analyses, interprets and reports information so that business decision makers become more effective’. This view of a researcher is based on what Burrel and Morgan (1985) call a functionalist view on the world, namely, that there is a reality independent of the human understanding. Basically all research rests upon some scientific philosophy affecting the researcher’s objectivity and truthfulness, which needs to be explained in order to provide an understanding of the choices made throughout the research process as well as the results reported from it.

The research in this thesis mainly rests upon scientific realism, which holds that the world exists independently of peoples’ sense or perception of it. In other words, my view of science and reality is that there is an ‘objective’ world independent of our knowledge of it, which can be built upon observable and unobservable phenomena, and the way that these facts are perceived partly depends upon individual beliefs and expectations (Bunge, 1993). Moreover, Hunt (2005, p.131) states that although ‘the job of science is to develop genuine knowledge about the world, such knowledge will never be known with certainty’. Scientific knowledge must thus be critically tested and evaluated on a long-term basis to determine its truthfulness and to provide a reason to believe that something proposed in theory actually exists in reality (ibid.). Building on this basic understanding, it is in this study believed that network structure, network capability, and entrepreneurial orientation affect new ventures’ competitive performances, and thus represents conceptualised entities, attributes and structures related to the real world. The suggested theoretical assumptions, or mental abstractions, will then be investigated empirically and thereafter used to offer explanations, and eventually to suggest interventions that could affect new ventures’ performance. Sometimes the results of empirical investigations can be successful, that is confirmative, and sometimes not. Hunt (2005, p. 134) states that ‘high proportions of success, relative to failures, gives reason to believe that something similar to the entities, attributes, and structures posited..."
by the theory actually exists in the world external to the theory’. Either way, successful or failed outcomes are in scientific realism both seen as justifiable ways of reasoning that add knowledge to prior theoretical perspectives.

Scientific realists hence seek to develop theory that is approximately true, not true with certainty, because not all elements are observable and those elements that are observable might be biased by the researcher’s perceptions. As a result, what is presented in this study is the approximate true explanation of a new venture’s reality as the theoretical framework proposes this should look like.

3.2 Overall research design

Research design can be grouped into three main categories, namely exploratory, descriptive and causal research (Hair et al., 2007). This research is not exploratory in the sense that the subject in question is new and unknown to science. Instead, it aims to extend prior knowledge of entrepreneurial behaviour and new venture performance by searching for and describing network-related factors that can be linked to a new venture’s improved competitive performance. Hair et al. (2007) state that descriptive studies emphasise the measurement of features derived from theory and that causal research attempts to discover whether X causes Y. This study has both a descriptive and causal design, since it aims to identify the factors that could affect a new venture’s competitive performance, how much those factors influence the performance, and why they have this influence.

The theoretical framework that this research rests upon is based on theories within the entrepreneurship field and findings from my pre-study of start-up processes (Roininen, 2006). My pre-understanding of the studied phenomenon has thus been affected by both theory and empirical data. Moreover, I considered the studied phenomenon through the eyes of the venture owners/managers. That is, I believed that those persons knew best about the events that took place, and the decisions made in connection to those events, at the time the venture was established, and would therefore provide truthful and correct information. An entrepreneur’s behaviour is affected by his/her perceptions and is therefore important to take into account for understanding the behaviour of new ventures, as well as a more truthful picture of the ventures’ actions. Management perceptions of firm-level variables such as strategy, decision-making processes and firm performance are often used in entrepreneurial research (c.f. Miller, 1983; Covin & Slevin, 1989; Lumpkin & Dess, 1996; Wiklund & Shepherd, 2005; Madsen, 2007). Moreover, it is my belief that social science can move towards a more complete understanding of a new venture’s process in order to become established and to be competitive by means of accumulated knowledge through repeated investigations of new and prior proposed theories.
The overall attempt to study improved competitive performance of new ventures was based on both qualitative and quantitative methods. Through a qualitative pre-study I could identify patterns in academic spin-offs’ and non-academic new ventures’ processes to become established, and thus obtain a more holistic picture and understanding of new ventures’ different constraints. The method and results of this qualitative study is described more thoroughly in my licentiate thesis (Roininen, 2006). This doctoral thesis mainly relies on a quantitative approach that builds on hypothesis testing generated from theory and previous empirical research. The ambition was thus to form a basis also for statistically generalisable results. There are however, pros and cons with both research approaches, which I will discuss in the following section.

3.2.1 Qualitative and quantitative considerations

There are two possible options for research approaches, namely qualitative and quantitative. However, the choice of research approach depends on the research questions that are aimed to be addressed. In order to identify and understand a complex or evolving phenomenon, answering more of why and how questions (Yin, 2003), a qualitative research approach is more suitable, whereas quantitative studies are more appropriate for identifying and confirming suggested relationships between theoretical factors (Hair et al., 2007), especially in fields where our pre-knowledge is more developed. It is often feasible to combine these two methods in order to create proper knowledge of a phenomenon. Miles and Huberman (1994) state that qualitative methods give the researcher a possibility of discovering and understanding hidden or underlying issues in peoples’ ‘lived experiences’ locating the meaning people place on processes or events occurring in their lives. A qualitative investigation often generates theoretical generalisations, whereas a quantitative study generates statistical generalisations and could thus be used as a follow-up study to strengthen the prior research.

I have conducted a qualitative study in my licentiate thesis, providing a descriptive and holistic picture of new ventures’ establishment processes and depicting different and important underlying factors. The current study was on the other hand quantitative in order to follow up my previous findings and to be able to provide statistical generalisations. The results from the qualitative study pointed out some intriguing problems in a venture’s establishment process that I found interesting to investigate further. Thus, after a comprehensive literature study I was able to identify factors that theoretically, along with the previous empirical findings, could have a strong influence on the establishment of new ventures. By conducting a survey among Swedish new ventures, the suggested influential factors were investigated, generating a basis for statistical generalisation of the results. The drawback of this approach is that once the data
is collected there is not normally an opportunity to remedy problems later on, or to obtain any clarifications from the respondents, in the way that can be achieved with a qualitative case-study, which also facilitates a deeper and more holistic understanding of the phenomenon that is being studied.

The biases and strengths of the combined research approaches could also result in a more comprehensive and valid contribution to both theory and practice (Miles & Huberman, 1994). Moreover, by moving from a less structured data collection technique with subjective interpretations to a more structured one with objective ratings allows the researcher to replicate the findings, which also improves the value of the research (ibid.). This has been achieved in my research by the qualitative pre-study (presented in my licentiate thesis), which enabled me to explore the establishment process of new ventures, and then by replicating the findings through a survey-based study (this thesis) to confirm the factors that had affected new ventures’ establishment and performance the most.

### 3.3 Literature review

In light of the results from my pre-study, I continued with a thorough literature review and participation in doctoral courses in order to develop a theoretical framework based on entrepreneurship and network-based theories to be used as a rationale for the current study. In addition to the literature used in the courses, databases at the library of Luleå University of Technology (such as Business Source Elite [Ebsco], JSTOR, Social Sciences Citation Index) and publisher websites (such as ScienceDirec and Elsevier) were used to identify relevant literature. Keywords used were: start-up, new venture, network, cooperation, strategic alliance, network capability, network relationship, tie strength, venture performance, competitive advantages, entrepreneurial strategies, and entrepreneurial orientation, among others. This process was progressive and took place over an extended period. To develop a conceptual framework it is, as Miles and Huberman (1994) state, crucial to explain the main things of interest and to presume relationships between the constructs in the upcoming research. My conceptual framework, presented in the second appended paper, was also the foundation of my research questions and the basis for how to operationalise the research, such as which actors to target and what issues to deal with in the questionnaire.

### 3.4 Data collection

To obtain appropriate and valuable answers to my research questions it is important for me to define a target population possessing the desired information, to choose a sampling frame from which to draw a sample, and to select a sampling method for possible informants (Hair et al., 2007). To be considered as new ventures, the firms were not allowed to be older than approximately three years, and thus the appropriate companies were those
started during 2003. The timeframe of at least three years is in accordance with Deakins’ (1999) period of a start-up process. This timeframe has also been used in the well-known Global Entrepreneurship Monitor (GEM) project to define early-stage entrepreneurial activity. The GEM-study covers the time from the point when an entrepreneur commits resources to start a new venture that they expect to own themselves until they have owned and managed the venture for more than three months but not more than three and a half years (Bosma et al., 2008). Thus three years of operation was considered an appropriate time limit for selecting which firms to include in this study and to obtain information concerning their establishment and competitiveness. The total population in this study thus consisted of 7,520 new Swedish ventures started and registered as limited companies in 2003 that still were active with a turnover of at least 1 million SEK\(^2\) in last year. The names and addresses of the ventures were obtained from the Swedish database ‘Affärsdata’ containing details of all limited companies in Sweden. From this population, a random sample of 1,620 companies was drawn. By this sampling method I could ensure that the sample was representative of the population (Hair et al., 2007).

The type and amount of data to be collected for a study depends, according to Hair et al. (2007), upon the nature of the study and its research objectives. Building on the purpose of this study and its ambition to produce results that would allow statistical generalisation, I chose to use a survey for data collection. It is relatively easy to administrate a mail survey, and it is also a widespread method to structurally gather descriptive and cross-sectional data about, for instance, opinions and behaviours (ibid.). Thus, a questionnaire\(^3\) was sent to all the new ventures during May to August in 2007, and two reminders followed it up. 21 of the questionnaires were returned to me since the addresses were unknown and 11 of the respondents did not want to participate in the study. 204 of the companies did not match the sample criteria because of one or more of the following reasons; a) the venture was not started or registered during 2003, b) the venture was no longer in business, c) the venture did not achieve a turnover of 1 million SEK, d) the manager had not been working in the venture from the beginning. This last criterion was important for obtaining information of activities performed from the first year of operation until today. The final sample consisted then of 1,384 new ventures. The usable answers after two reminders was 171, resulting in a response rate of 12%. Low response rates such as this are often considered typical for this type of research (c.f. Moreno & Casillas, 2008; Wiklund & Shepherd, 2005; Baum, Locke & Smith, 2001) and are not unusual in other countries. On the other hand, a low response-rate is not unproblematic since it may e.g. question the study’s statistical generalisation.

\(^1\) 1 SEK = 0,11 EURO  
\(^3\) English and Swedish versions of the questionnaire are presented in the Appendixes.
Therefore a non-response analysis addressing structural factors such as firm size, growth, location and category of business sector has been conducted. The results are reported in Table 2.

Table 2. Non-response analysis

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>F-value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees year 1</td>
<td>0.001</td>
<td>0.981</td>
</tr>
<tr>
<td>Employees year 2</td>
<td>0.312</td>
<td>0.576</td>
</tr>
<tr>
<td>Employees year 3</td>
<td>0.145</td>
<td>0.703</td>
</tr>
<tr>
<td>Turnover year 1</td>
<td>1.014</td>
<td>0.314</td>
</tr>
<tr>
<td>Turnover year 2</td>
<td>0.469</td>
<td>0.494</td>
</tr>
<tr>
<td>Turnover year 3</td>
<td>0.661</td>
<td>0.416</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chi-square</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional belonging</td>
<td>0.513</td>
</tr>
<tr>
<td>Sectoral belonging</td>
<td>0.200</td>
</tr>
</tbody>
</table>

By means of a one-way ANOVA, firm size and growth was tested for, and for the nominal variables, i.e. location and sectoral belonging, a Chi-square test was conducted. These non-response analyses did not show any significant differences between the responding firms and those not responding regarding the addressed variables.

3.5 Measurements

To be able to understand and explain the role of the different concepts in this research I have theoretically defined each concept, but I also need to specify indicators that could serve as indicators for the concept measuring them quantitatively (Hair et al., 2007). To avoid misleading theory building I used, as Lumpkin and Dess (1996) advise, multiple performance measurements to distinguish the multidimensional effects that an entrepreneurial strategy may have on new venture performance. Corresponding to other studies of entrepreneurial orientation (c.f. Runyan et al., 2008; Madsen, 2007; Lyon, Lumpkin & Dess, 2000), subjective assessments were also used in this study to measure the variables due to the relevant and enlightening information those assessments provide. Subjective assessments are, moreover, frequently used in entrepreneurship research since the owners/managers are expected to be the most knowledgeable concerning the company’s strategy and performance, and because performance measures of e.g. how well a firm meets its goals are consistent with organisational effectiveness (Runyan et al., 2008). Perceived satisfaction with a firm’s actions and performance is, in prior research, moreover confirmed to highly correlate with objective measures such as returns and sales growth (Walter et al., 2006; Kale et al., 2002). The indicators used in this study to measure firm performance, network structure, network capability, entrepreneurial orientation and venture complexity are argued for in detail in the appended papers, and presented together in Appendix A in Paper 5.
3.6 Data analysis

In Paper 1, I searched for patterns among the non-academic ventures’ and academic spin-offs’ start-up processes in order to find resemblances or contrasts among the new ventures (Miles & Huberman, 1994), and then compared the findings with theories on the subject in order to identify accordance or deviations. The aim was to be able to answer questions of how different start-ups’ processes in becoming established come to look the way they do, and why those processes look the way they do. This was further developed in Paper 2 into a conceptual paper serving as a basis for future, more quantitatively conducted, studies of the phenomenon.

In the following Papers 3-5, the collected survey data was then analysed by means of different software packages using several multivariate data analysis techniques. These techniques allow multiple and simultaneous measurements of the investigated objects, and often provide possible explanations of multiple relationships within the studied phenomenon (Hair, Black, Babin, Anderson & Tatham, 2006). In this way, answers to questions concerning what, if any, aspects of a new venture can be related to its entrepreneurial orientation and performance. But before any multivariate analysis was conducted, data was examined to assess normality and whether there were any missing data. The software used to analyse the data were:

- SPSS 15.0, to conduct an exploratory factor analysis\(^4\), that is, to determine whether network capability, entrepreneurial orientation, performance and venture complexity (internal and external) represented distinct constructs with a set of common underlying dimensions (Hair et al., 2006). The items were in addition ‘forced’ by the software to form an expected number of factors, which yielded good results. These procedures aim to reduce data to defined sets of variables representing the theoretical constructs, and also assure more valid constructs.
- SPSS 15.0 was also used to perform a regression analysis to investigate different aspects of network structure on the new ventures’ competitive advantages, presented in Paper 3. In this way, I could ensure maximal prediction of the dependent variable where each independent variable’s relative contribution to explaining the phenomenon under study is weighted against the others (Hair et al., 2006).
- AMOS 7 was used in Paper 4 for a subsequent confirmatory factor analysis to specify the factors derived from SPSS. This software was also used to test theoretically constructed relationships, and a structural equation modelling (SEM) was thus used to analyse the effects of a new venture’s network capability on its entrepreneurial orientation and performance.

\(^4\) Loadings and alpha values are presented in Appendix A, in Paper 5.
performance, as well as possible moderating effects of the venture’s complexity.

- Similarly, LISREL 8.72 was used to conduct an SEM analysis of the complete theoretical model in Paper 5.

By using SEM when investigating new ventures’ competitive performance, more sets of variables can be used to define which constructs are related to each other and how (Schumacker & Lomax, 2004). As a result, as Schumacker and Lomax (2004, p. 3) state, SEM tests theoretical models for using ‘the scientific method of hypothesis testing to advance our understanding of the complex relationships among constructs’. In this way, the SEM analysis determined to what extent the empirical data supported the theoretical model. The software also provides suggestions to add or remove paths in order to increase the model fit. This cannot be done by using regression analysis in SPSS software, and thus more advanced model indices are accomplished to determine whether to reject the assumed hypotheses or not. However, when running SEM analysis it is necessary to use multiple goodness-of-fit measures, i.e. model indices. This is because it is interesting to observe to what extent the suggested theoretical framework fits the population. The overall null hypothesis tested in SEM is that the implied model holds in the population model. Normed chi-square (CMIN/DF), GFI, NFI, RMSEA, and RMR are some common model indices used to assess this fit (Schumacker & Lomax, 2004; Browne & Cudeck, 1993). The model indices of the SEM in this research are presented in Papers 4 and 5.

3.7 The research process and the papers

This thesis includes five appended papers, which have all been peer-reviewed for publication in an academic journal or for presentation at an academic conference. There is a history behind, and a continuous thread through, these papers that I want to describe next in order to give the reader a more complete understanding of the research process. I started this journey towards my dissertation five years ago, in January 2004, by investigating the start-up process among academic spin-offs and non-academic new ventures. The result of this research is presented in my licentiate thesis, a half way examination towards my doctoral dissertation. The current research, which began following the licentiate examination, was then conducted with a great deal of theoretical and methodological discussions, feedback and constructive critique from my supervisor professor Håkan Ylinenpää and my co-supervisor Dr. Mats Westerberg.

The first appended paper in this thesis presents my prior research. When I had almost finished the manuscript I wrote a conference paper together with my supervisor Håkan Ylinenpää in which we presented a compressed explanation of my research, and attended a high technology small firm conference (HTSF) in May 2006 in Enschede in the Netherlands. While participating in the HTSF’s
doctoral workshop I received significant feedback from foremost the seniors, but also from other doctoral students. Those comments finally resulted in the licentiate thesis presented in September 2006. Some time later the paper was revised into an article accepted for publication in the Journal of Small Business and Enterprise Development (the first appended paper), and into a chapter in a forthcoming book edited by Carin Holmquist and Johan Wiklund with the preliminary title *Growth and dynamics in Swedish enterprising*. I felt that it was important to describe and explain my prior research in my thesis in order to understand why I chose to focus on new ventures’ establishment processes in my current research.

During the autumn of 2006, I continued discussion of my ideas for further research with my supervisor professor Håkan Ylinenpää and co-supervisor Dr. Mats Westerberg. From these discussions, along with a brief literature research, Mats and I developed a conference paper presented at the first Nordic Innovation Research conference (NIR) in Oulu, Finland, in December 2006. That paper was my research proposal, and it described my forthcoming research, and the reasons why networks were important for new ventures’ resource configuration and entrepreneurial strategy. This conceptual framework is presented in the second appended paper in this thesis. At the time, I still had academic spin-offs and non-academic start-ups as a moderating factor in my model, since these had been central in my previous study.

Based on this conceptual framework, the doctoral courses in quantitative methods, entrepreneurship and network theories, and a deeper literature search, a questionnaire was developed, with constructive feedback from colleagues and two entrepreneurs, between January and May 2007. This questionnaire was then sent to new venture owners/managers in Sweden. After receiving the respondents’ answers, three papers were simultaneously developed - based on the results from different multivariate data analysis techniques.

The first of these papers, presented in the third appended paper, considered one aspect of my model, namely the benefits that new ventures could achieve from their network structure. I thought that it could be difficult to use venture origin as a differing factor in the model, therefore I used other measurements that could distinguish different new ventures. I thought that a firm’s degree of routineness could vary among new ventures, and that the ventures’ employing unfamiliar methods with a variety of tasks to accomplish its establishment would benefit more from network relationships than ventures depending on routines. In prior research it is argued that e.g. academic spin-offs have a complex process, and product development, to transform their technology into products and services. Moreover, firms developing products of high technological complexity more often face a higher risk of failure than do other firms. As a result, I chose to use
the ventures’ degree of routineness, here referred to as a venture’s internal complexity, instead of venture origin to distinguish the ventures in this study. A reason was that not all academic spin-offs have to be highly complex whereas non-academic ventures have to be less complex, and thus venture complexity might be a better factor to explain differences in the success of new ventures’ establishment and performance. This study was first presented at the second NIR conference in Luleå, Sweden, in December 2007, and then revised based on comments from the conference members, into an article published in The International Journal of Technoentrepreneurship in 2008.

If new ventures engage in networks, they should by having capabilities to utilise their contacts be favoured even more when developing external network relationships. I thus examined a second aspect of my model: how higher levels of a firm’s network capability can improve the venture’s strategies for entering a market (i.e. entrepreneurial orientation) and its performance. Here I found that not only does internal venture complexity have an effect on the level of entrepreneurial orientation among new ventures, but also an external venture complexity in terms of targeting immature markets with unknown products/services had this effect. This state of complexity is, as the internal mode, a feature often found among academic spin-offs. This study was first presented at the European Academy of Management Conference on Management Diversity (EURAM) in Ljubljana, Slovenia, in May 2008, and then further developed into a journal article submitted to a peer-reviewed journal in June 2008 and further revised in October 2008.

The third paper, developed in parallel with the previous two, finally considered my complete conceptual model. That is, how a new venture’s network structure, network capability and entrepreneurial strategy (i.e. its entrepreneurial orientation) could relate to the venture’s performance. The model also implied that the new venture’s network relationships and network capability could also relate to its entrepreneurial orientation. Finally, the links to the new ventures’ performance could be moderated by the venture’s complexity. In this paper, network structure, network capability and entrepreneurial orientation were measured as whole constructs in contrast to the previous two papers where each of the constructs were measured in different dimensions. This final paper was developed together with Mats Westerberg and presented at the 2008 Babson College Entrepreneurship Research Conference at Chapel Hill, North Carolina, in June 2008. We received fruitful comments from other scholars participating in the conference, and will revise the paper for submission to a peer-reviewed journal.
3.8 Validity and reliability of this study

When conducting empirical studies it is essential to minimise any measurement errors and to maintain the quality of the study. Hence, in this section I will discuss the steps I have taken towards ensuring that the constructs measure what they are supposed to measure, i.e. the validity of this study, and that the constructs consistently measure the concept without errors, i.e. the reliability of this study. In this study this is achieved by assuring its construct validity, construct reliability, statistical validity and external validity.

‘Validity refers to the establishment of evidence that the measurement is actually measuring the intended construct. Measures can be reliable without being valid, but cannot be valid without being reliable’ (Chandler & Lyon, 2001, p. 103). Therefore the study’s construct validity needs to be assured, so that the set of measures accurately represents what the theoretical constructs (or the conceptual definitions used in the study) attempt to capture (Hair et al., 2007). This can be achieved through reliance on well-known literature and previous empirical tests that have been conducted on the constructs and the expected relationships between these constructs. I developed my theoretical framework by means of a thorough literature review and a pre-study, and adopted existing scales and constructs used in prior studies. Thereby the measurements used in this study had already been empirically validated in terms of constancy and importance for new venture performance. Some new scales were also developed using existing theory and results from my pre-study. The items related to the constructs were also pre-tested among other researchers and with two entrepreneurs. Constructive criticism from others is particularly important when new scales are developed or existing scales are significantly revised (Summers, 2001). Finally, when empirical results are congruent with the theoretical constructs, in this case how network structure, network capability and entrepreneurial orientation affects new venture performance, there is a final confirmation of the internal validity of this study.

In addition, by assessing the degree of internal consistency of multiple items measuring the same construct, the study’s construct reliability can be achieved (Chandler & Lyon, 2001). This is commonly assessed by the use of Cronbach’s alpha, which ranges from zero to one. A construct must have two or more items in order to calculate an alpha coefficient, and a coefficient of 0.70 is often viewed as the minimum acceptable level for this assessment. All the constructs in this study consisted of at least three items and the minimum level of the alpha coefficient was obtained in all construct assessments except for a ventures external complexity, which only achieved 0.65. However, Nunally (1978) points out that values as low as 0.50 are acceptable.
Another validation criterion is *statistical validity*, or the method for probability sampling including all the possible informants to be included (Hair et al., 2007). The sampling of the new ventures should thus be random and representative of the population, and the responses need to be free from bias. In this study, the sample size was proportionately and randomly selected to represent the population and thus to be able to provide well-founded generalisations. A difficulty in obtaining obtain this criterion of validity was, in this study, that the final response rate from the investigated ventures was quite low, yet not significantly different from those who did not answer. One reason for the low response rate could be that this group of ventures was also targeted by other researchers interested in new ventures (with a survival limit of three years) and by the Swedish government demanding that all Swedish firms answer their surveys. This overload of questionnaires and investigations was actually one explanation offered by some firms for why they did not want to participate in this study. Another explanation could be that the questionnaire was too comprehensive, and that some firm owners/managers considered the network structure part of the questionnaire (the C-section) to be too difficult to grasp. I have to agree with these comments to some extent. However, to capture a complex phenomenon such as the one under investigation by using a shorter, or simpler, questionnaire is difficult considering that all constructs being investigated need to be composed of several items in order to be considered valid.

In addition, sampling goes hand in hand with a study’s generalisability. Hultsch, MacDonald, Hunter, Maitland and Dixon (2002) argue that both are fundamental methodological issues within social and behavioural sciences research. But for reasons such as inaccessibility to the studied entity or high costs, researchers can only examine a portion of the possible observations that could have been made. Therefore, a study’s external validity, considering the ability to generalise cause-and-effect relationships to other populations, settings, and times is important. The non-response analysis of this study shows that the data is normally distributed with no extreme outliers, skewness or kurtosis, and is thus assuring that the results from this study can be applicable for the whole population of Swedish ventures started in 2003. I do not see any reason why the result obtained in this study should not be applicable also to other ventures and countries with similar contexts.

Finally, I feel that the response bias needs to be discussed a little more since the collected empirical data were principally based on self-reported assessments made by the new venture’s owners/managers. A drawback with these types of measures is that the results rely on subjective data, which could be biased by the respondent’s memory and perceptions. However, using managerial perceptions to study firm-level aspects has a relatively high level of validity due to the fact
that a broad set of questions representing the subject of interest can be used to address the underlying nature of a construct, such as network structure, network capability, entrepreneurial orientation and performance as in this study (Lyon et al., 2000). Walter et al. (2006) and Kale et al. (2002) moreover point out that self-reported data actually correlates with secondary (objective) data. In addition, Lyon et al. state that gathering perceptions via a survey produces results that are more valid because the questions asked are easily linked to specific constructs in the theory and thus cause less confusion when interpreting the empirical data. Hence, perceived assessments can be appropriate and necessary to study key constructs when they are carefully performed. They can also be discussed if the use of a single informant in each new venture is sufficient for a study to be considered valid. Actually, this person, that is, the venture owner/manager, is most likely to be the most knowledgeable individual in the firm for assessing the issue in focus (Glick, Huber, Miller, Doty & Sutcliffe, 1990). In addition, this person might, as often is the case in new small ventures, be the only person in the firm, and thus reflects the firm-level of view.

3.9 Limitations

As with other studies, this study also had its delimitations. One limitation was the time frame of the new ventures’ establishment process. In this study only a specific part of the new ventures’ circumstances in entering a market was addressed and thus a wider perspective of the process was lost. Nonetheless, the results are valid as part of an exploratory effort to shed more light on the role of network structure, network capability and entrepreneurial orientation as tools for increased competitiveness among new ventures entering a market. Hopefully, future studies can build on the results from this study and provide answers to questions that this study has only begun to formulate.

The environmental conditions that were affecting the new ventures’ access to competitive advantages through network relationships is a second dilemma in this study. Strong ties seemed to facilitate competitive advantages in hostile environments, whereas weak ties were beneficial in dynamic environments. The results regarding tie strength in this study could however be a consequence of the measurement where I have used somewhat different frequencies of the contacts to define weak and strong ties. My weak ties consisted of contacts less than once a month and strong ties by contacts at least once a week, compared to Granovetter’s (1973) definition where the frequencies occurs once a year or less versus at least twice a week. The results could also be dependent on the point in time when the measurement was performed. In this research, the events under study were measured three years after the start-up of the firm. It is therefore possible that the respondents at this point have forgotten, or neglected, the importance of weak ties which are often important at the beginning of a product’s or a new firm’s life cycle, and just remembers the resent contacts.
facilitating their further development of the product or business. Thus, the results might not have been quite the same in a longitudinal study where the measurements occur in real-time and over a longer period.

Finally, there are some similarities among the definitions of venture complexity and academic spin-offs. As Shane (2004) points out, academic spin-offs often have characteristics that are common with the characteristics of internally and externally complex ventures. Namely, the complexity of their products/services and processes, that the products/services often are new and unknown to the customers, and an uncertainty whether there is a market for their product. On the other hand, the criteria distinguishing the new ventures apart in my qualitative pre-study (presented in Paper 1) and the current quantitative study (presented in Papers 3-5) were somewhat different and thus require further comment. As discussed previously (in section 3.7), I shifted focus from venture origin to venture complexity in my research process since academic spin-offs versus non-academic new ventures (the distinguishing factor in the pre-study) did not distinguish the new ventures in the current survey-based study. These empirical results also showed different performance outcomes for the two types of ventures, where academic spin-offs had lower performance and complex ventures had higher performance. This paradox may be explained by two circumstances. First, the selection criteria in these two studies were changed. In the current study, the new ventures were expected to have a turnover of at least one million SEK and to have been active for three years, whereas no such criteria were employed in the pre-study. However, it might be due to the complexity that resides within academic spin-offs that it takes longer than three years for these ventures to improve their performance. Consequently, academic spin-offs that had not met the criteria were automatically excluded in the second study. The selection criteria could similarly have excluded complex ventures which did not meet these criteria, and as a result only the very successful complex ventures, and academic spin-offs, fulfilling the criteria were included in the study. Thus, the selection criteria used might be an explanation behind the different results among complex ventures and academic spin-offs. At a general level however, the results in the form of venture characteristics are still suggesting important analogies that can be found between venture complexity and venture type.
4. Description of findings in appended Papers

This section includes brief summaries of the results from the empirical studies designed to investigate how network structure, network capability and entrepreneurial orientation affect new venture performance. Each paper will point to what research question the specific study aims to answer.

4.1 Paper 1

Paper 1 – ‘Schumpeterian versus Kirznerian entrepreneurship – a comparison of academic and non-academic new venturing’ – is a paper developed from my licentiate thesis describing the start-up processes and the main differences between academic spin-offs and non-academic start-ups. This study was completed in 2004-2005 and was the basis for the current study presented in Papers 2-5. By using six case studies, where the respondents described in a narrative way their start-up process, including factors that had effected or influenced the process, a ‘rich-picture’ (Denzin & Lincoln, 1994) of different start-up processes was obtained. The results showed that due to their different origins the new ventures also followed different strategies to enter their specific markets. The academic spin-offs, created from university research or education, were more innovative and product-oriented than the non-academic start-ups, and they entered their target markets employing a technology/science-push strategy. In addition, considerable resources and partner cooperation was required to manage the establishment of the academic spin-offs. The non-academic ventures, by contrast, exploited emerging opportunities in a market by using a market-pull strategy, which mainly relied on offerings already known to the market, and by building on their own in-house resources. On the other hand, the non-academic start-ups already achieved net profits after the first year of operation, whereas the academic spin-offs had a longer timeframe, which could be a result of academic spin-offs being more resource constrained.

The conclusion from this study was that start-up processes are dependent on situational and contextual factors, and thus are far from a uniform processes. Overall, academic spin-offs came forward as examples of Schumpeterian entrepreneurship, whereas non-academic start-ups acted more in a ‘Kirznerian’ way. In other words, academic spin-offs had a role of destroying existing market structures by introducing more innovative and favourable solutions to customers’ problems, and thereby created ‘imbalances’ in a previously stable but less dynamic economy, whereas the non-academic start-ups by exploiting an unfilled market need created a ‘balance’ between demand and supply in the market.

The differences in the new ventures’ resource needs, their configuration of resources in terms of collaboration, and their choice of different entry strategies
influenced me to study the later phases of the start-up processes, when new ventures enter a market and further develop their ventures, more in depth and in a larger scope so as to be able to make empirical generalisation.

4.2 Paper 2

The second paper, - ‘The relation between network competence, network structure, strategy and new venture performance’ – is a conceptual paper developing a model to explain new venture performance and competitiveness and to raise interesting research questions. The model suggests that new ventures can enhance their competitiveness, and thus performance, both directly and indirectly through their entry strategy. However, this strategy could be improved and fulfilled by using network relationships in order to obtain essential resources, capabilities and information; and the best way to achieve these is to have an ability to initiate, develop, and utilise network relationships. Hence, a new venture’s network relationships and its capability to utilise these relations could affect its strategy and competitive performance. Further, the model suggests venture complexity as a moderating factor affecting these relationships, where those ventures having higher internal and external complexity would benefit more from their network structure and ability to handle relationships. How this model can tested is also briefly outlined in this paper.

Having outlined a theoretical framework as a basis for testing how new ventures could enhance their competitive performance, the following papers investigate the different constructs that are suggested as affecting new venture performance.

4.3 Paper 3

The third paper – ‘Start-ups’ achievement of competitive advantages through network relations’ – aims to answer which aspects of a new venture's network structure that can be related to its entrepreneurial orientation and competitive performance. Thus, this paper describes new ventures’ network structures and tests how tie strength and trust between network relationships affect the competitiveness of different ventures’, which could enhance their performance. By using internal venture complexity, that is, the ventures’ degree of routineness, as a distinguishing factor of different types of new ventures, the results showed that complex new ventures collaborated with international and large partner firms to acquire legitimacy, expertise, and competencies within methods or processes to a larger extent than did non-complex new ventures. This might be due to the complex ventures’ less familiar methods and higher task variety, requiring specific resources and competencies from partners with extensive business experience and international markets in order to be competitive. The non-complex new ventures, on the other hand, had a tendency, although not significant, to cooperate more with large customer firms in a
nearby region, to acquire other business-specific resources and management skills. International collaborations were less used by the non-complex ventures than by complex ventures, although they were aware of the necessity to go global by cooperating with international partners.

Moreover, the results showed a positive effect of network relationships. Both strong and weak ties improved a new venture’s competitive advantage, as did high levels of trust between the venture and its network relationship. In hostile environments, strong ties tended to offer competitive advantages, while weak ties were more facilitative in dynamic environments. This study also wanted to investigate if venture complexity had any impact on a new venture’s performance and competitiveness through its network structure. The results showed that venture complexity had both a moderating and a direct effect. When studying network ties from an overall perspective, that is, without splitting the ties into weak and strong ties, a complex venture benefited more from its ties than did a non-complex venture. When the network ties were separated into strong and weak ties, the results showed a direct effect, instead of a moderating effect, of venture complexity on new venture competitiveness among strong ties. This indicates that new ventures, with fewer routines and larger task variety, learn more from strong ties in terms of how to increase their competitive performance jointly. In other words, a complex new venture needs to have frequent contact, built on trust, with its partners, to understand how to achieve advantages and thus increase its competitiveness. The positive and significant correlation between new a venture’s competitive advantages through network ties and its performance imply that improved competitiveness via relationships have a positive influence on new venture performance; foremost in terms of increased efficiency, sales performance and innovativeness. Surprisingly, there was a strong link between enhanced competitive advantages through strong ties and a firm’s innovativeness. In prior research, weak ties, rather than strong ties, are emphasised to result in competitive advantages due to e.g. the new information that these relationships possess. These present results on the contrary emphasise frequent contacts as important for innovativeness, hence indicating trust to be vital for innovative collaborations.

Since a new venture benefits from its network relationships, and especially from strong ties, the venture’s capability to initiate, develop and utilise these relationships may also have an effect on the outcome. That is, the better a new venture is at handling network relationships, the more the venture should benefit from them. This association was investigated in the next paper.

**4.4 Paper 4**

The fourth paper – ‘Network capability as means for improved entrepreneurial strategy among young ventures’ – investigates which aspects of a new venture's
network capability that can be related to its entrepreneurial orientation and competitive performance. In other words, the study investigates possible effects of different network capability dimensions in relation to the new venture’s performance as well as its tendency to act in an innovative, proactive and risk-taking manner in its entrepreneurial strategy. This ability, called network capability (Walter et al., 2006), was shown to influence both the entrepreneurial strategy of a new venture and its performance, but somewhat differently. Having good relational skills and partner knowledge improves a new venture’s proactiveness, whereas its ability to initiate new relationships enhances its risk-taking and innovativeness. The results thus suggest that network capability is important in order for new ventures to recognise entrepreneurial opportunities and to be competitive. Moreover, the variable missing in previous studies of network capability, namely a venture’s ability to initiate new relationships, was shown to be a highly important dimension for new ventures to be able to act entrepreneurially by using its network capability. The dimensions of a new venture’s network capability, however, did not have any effect on its performance, whereas its innovativeness did. The more innovative a new venture was the better performance it obtained. Thus, the results suggest that new and young ventures’ entrepreneurial strategy is improve by higher levels of network capability, and by having an improved strategy the venture would improve its performance.

In this study it was also believed that contextual factors, such as the venture’s internal and external complexity, could affect a new venture’s entrepreneurial orientation and performance. The results showed that an externally complex venture, i.e. a firm that is targeting immature markets, improved all dimensions of its entrepreneurial orientation, whereas an internally complex venture, i.e. a firm with less routineness, enhanced its proactiveness and innovativeness but not its propensity for risk-taking. This implies that complex ventures are more inclined to use entrepreneurial orientation to be competitive. However, entrepreneurial risk-taking is more marked among ventures with high degree of external complexity since these companies are satisfying customers’ latent needs with unknown products causing ambiguity for the company to know which markets to target, and thus pushes the ventures to take larger risks to succeed. Venture complexity did not, however, have a moderating effect on the link between a new venture’s network capability and its entrepreneurial orientation. In other words, complex new ventures did not benefit more from their network capability to improve their strategy than did non-complex new ventures.

There was however a moderating effect on new venture performance among externally complex ventures. A new venture targeting immature markets increased its performance more than others by using coordination abilities, but the venture’s performance declined if it had high relational skills. These result of
increased performance due to higher coordination abilities signal that engagement in inter-organisational activities connecting the collaborating firms into a network of mutually supportive interactions is important for new and young venture performance when the venture targets an immature market. On the other hand, responding to a broad range of information and social stimuli from external relationships, in other words having high relational skills, when targeting immature markets appears to take place at the expense of the firm’s performance.

Another contingent factor effecting a new ventures entrepreneurial orientation, but not performance, was the origin of the venture. New ventures with an origin in university research or education, i.e. academic spin-offs, were more innovative than non-academic ventures with no relations to universities. This, on the other hand, is not unexpected since academic spin-offs often are created from knowledge intensive or high technology research. Finally, the results showed that environmental circumstances also had a positive influence, but only on the ventures’ entrepreneurial orientation. Operating in a highly hostile environment increased all dimensions of a new ventures entrepreneurial orientation, indicating that severe competitiveness pushes a new venture to seek new opportunities and to act quickly.

4.5 Paper 5

The last paper – ‘Network structure and networking capability among new ventures: tools for competitive advantage or a waste of resources?’ – finally tests the overall model investigates the three research questions on a more general level. Namely, which aspects of a new venture’s network capability, network structure and entrepreneurial orientation (as constructs) that can be related to new venture performance, and whether there are any moderating effects of the venture’s complexity on venture performance. Network structure and network capability was in this study hypothesised to improve a new venture’s entrepreneurial orientation as well as its performance, and high levels of an entrepreneurial orientation should in turn increase the new venture’s performance. The results showed that both network structure and network capability increased a new ventures entrepreneurial orientation, but did not have any effect on new venture performance. Entrepreneurial orientation alone, however, had a strong positive influence on new venture performance. In other words, a new venture improved its entrepreneurial strategy by networking, and by an improved strategy the venture attained increased performance. Thus, engaging in network relationships and developing a capability to manage the relations in order to improve the entrepreneurial strategy should be important for new ventures if they strive for profitability.
Finally, it was hypothesised that venture complexity would act as a moderating factor. That is, the more complex a new venture is, the more it would increase its performance through a developed network structure and by employing high levels of both network capability and entrepreneurial orientation. The results showed no moderating effect, but instead a direct effect. Internally complex new ventures, that is, firms with a low degree of routineness, were strongly related to higher levels of entrepreneurial orientation and weakly to new venture performance, while externally complex new ventures, that is those ventures targeting immature markets, had a weak positive influence on the firm’s entrepreneurial orientation. This implies that complex new ventures tend to use more entrepreneurial strategies to be competitive, especially if the venture uses unfamiliar methods and a variety of tasks in their business.

4.6 Summary of findings

In summary, the results from this research, presented in Figure 2, show that the use of network structure increased new ventures’ competitive advantages and influenced their entrepreneurial strategy positively. The ventures’ strategy (i.e. entrepreneurial orientation) was also be improved by the firms possessing high levels of network capabilities, i.e. the ability to initiate, develop and utilise network relationships. Ultimately, by having a superior entrepreneurial strategy, that is acting in an innovative, proactive and risk-taking manner to be competitive, the studied ventures’ performances increased significantly.

It was, however, in this study suggested that contingency factors such as the venture’s internal and external complexity would moderate the link between a venture’s entrepreneurial orientation, network structure, network capability and its performance. In other words, the more complex the new venture is, the better the venture would perform by employing an entrepreneurial strategy, engaging in network relationships, and having an ability to manage those relationships. The moderation of the link between a firm’s entrepreneurial orientation and performance, and between its network structure and performance, was not supported. However, when the firms’ network capability was investigated as five separate dimensions in Paper 4, the results showed both advantages and disadvantages for an externally complex venture using this capability to increase its performance. With an ability to coordinate partners and activities, an externally complex venture increased its performance, but on the other hand reduced the performance if it had high relational skills. This is illustrated in Figure 2 by a dashed line between NC and PERF, affected by venture complexity. When network capability was studied as an overall construct, it had no moderating effect on new venture performance.

The results showed mainly direct effects of venture complexity on the firms’ entrepreneurial orientation in all studies. Internally complex new ventures, for
example, benefited more from strong ties than did non-complex ventures. That is, the internally complex new ventures attained advantages that are more competitive from their strong ties than did non-complex ventures. Moreover, in the study of new ventures’ network capability, both externally and internally complex new ventures used entrepreneurial orientation more than non-complex new ventures to be competitive. Overall, the results showed that complex ventures employed entrepreneurial orientation to a greater extent than did non-complex ventures, and internally complex ventures also had a slightly higher performance than non-complex ventures. Externally complex ventures were the only mode of complexity that had a moderating effect on firm performance when investigating the different dimensions of a venture’s network capability. Tin other words, the new ventures that targeted immature markets with novel products were facilitated more by having coordination skills, but hampered by their relational skills, than ventures targeting mature markets with known products were.

Figure 2. The empirical findings of links to increased firm performance among new ventures.

--- = moderation on the link between NC and PERF by external venture complexity when the five NC dimensions were investigated separately; coordination (+), relational skills (-).
5. Discussion, conclusions and implications

In this chapter, I will discuss how a combination of a new venture’s network structure, its network capability and the employment of an entrepreneurial orientation can affect its performance in different contexts. In this way, I aim to provide a better understanding of the circumstances that affect a new venture’s competitiveness and firm performance, which ultimately may affect its survival. This chapter is concluded with theoretical contributions, practical implications, and suggestions for further research.

As mentioned at the beginning of this thesis, policymakers and politicians in Sweden face two main challenges concerning the country’s business development. First, the proportion of entrepreneurs in Sweden is low and thus needs to be increased, and second, there is a need for more growth in already established businesses in order to contribute to increased employment (Nutek, 2008). Alexander and Young (1996) also point out that a company is required to focus on activities that create competitive advantages and has thus, according to Quélin and Duhamel (2003), a pressure to create value ensuring the existence and further development of the firm. This study aims to increase the understanding and knowledge of the factors that affect new ventures’ competitive performance and thus increase the firms’ chances of survival and contribution to economic growth. Among prior entrepreneurship studies of firm performance, few studies have focused on how new and young ventures can achieve an enhanced entrepreneurial strategy (namely its entrepreneurial orientation) and improved performance through network activities. Prior research has also neglected the differences in how different types of new ventures emanating from diverse contextual settings utilise their networks and entrepreneurial strategies to achieve profitability. The overall purpose of this research was thus to identify network-related factors that can be associated with a new venture’s competitive performance. By also elaborating on different contextual factors, i.e. internal and external venture complexity, affecting the establishment of new ventures in a market, an enhanced understanding of new venture performance, and survival, can be obtained. In order to explain the content of this study and to add knowledge to previous understanding and theory of new venture performance, I will start by answering the specific research questions of this thesis. Each question considers different theoretical constructs that are suggested to influence a new venture’s performance.

5.1 The effect of network structure

The first research question: which, if any, aspects of a new venture’s network structure can be related to its entrepreneurial orientation and competitive performance, could partly be explained by the new venture’s access to necessary resources, competencies and information. Networking was a common mean
among all new ventures to acquire necessary and scarce resources resulting in competitive advantage. However, different types of ventures needed different resources due to their contextual circumstances, and therefore they searched for different contacts holding those specific resources. In this study, complex new ventures often searched for cooperation with large, international partners to obtain access to legitimacy, expertise, and competencies within methods or processes that were crucial for the ventures’ competitiveness. The non-complex new ventures, on the other hand, had a tendency to cooperate with large customer firms in a nearby region, accessing other business-specific resources, and management skills. These differences are a result of the ventures’ degree of familiarity within its work methods and variety in work tasks (Abernathy & Brownell, 1997; Perrow, 1970), which would require different resources and competencies from partners. As a result, the type of partners and the resources, competencies and information they possess affects new ventures’ competitive performance.

Another answer to the first research question could be found within the strength of the network relationships. Analyses of the effects that tie strength and trust between the relationships have on new ventures’ competitive performance resulted in an additional explanation of improved competitiveness. The empirical results showed that frequency in contact and level of trust between the new venture and its partners were significant for the ventures’ competitive advantage. The stronger the ties were, and the more trust the relationships contained, the better competitive advantages the new venture obtained from the contacts. Moreover, achieving competitive advantages through strong ties was also shown to increase the new ventures’ performance, especially their innovativeness. These results are in contrast to prior network-based research, where Granovetter (1973) and Oviatt and McDougall (2005) amongst others argue that it is the sporadic contacts with weak ties that result in more innovativeness and competitive advantages due to the new and dissimilar information they possess. On the other hand, strong ties often provide comfort and reliability in uncertain settings, facilitating the share of crucial and confidential information as well as trustworthy cooperation based on solidarity and mutual influence (c.f Nicolaou & Birley, 2003b; Adler & Kwon, 2002; Aldrich, 1999; Krackhardt, 1992). These advantages from strong ties are crucial for new ventures developing new and/or innovative products/services in uncertain surroundings, and for preventing competitors from imitating their products/services too early.

Finally, the environmental conditions also affected the new ventures’ access to competitive advantages through network relationships. Strong ties seemed to facilitate competitive advantages in hostile environments, that is, when the competitiveness is severe in the market, whereas weak ties were facilitative in
highly dynamic environments. This might be due to the fact that in a highly changeable environment companies need to be alert and keep up with the changes, and new information from weak ties facilitates new ideas, resulting in competitive advantage (Granovetter, 1973). Strong ties, on the other hand, are based on trust (Krackhardt, 1992) and facilitate sharing of crucial and confidential information (Nicolaou & Birley, 2003b). This is critical in the joint development of competitive advantage in a highly competitive market for outperforming competitors. However, confirmation of this suggested finding requires further research.

5.2 The effect of network capability

When a new venture engages in network relationships they are expected to be more effectively facilitated by cooperation if the venture itself has good capabilities of managing these relationships, resulting in learning experiences (Heimeriks & Duysters, 2007; Kale, Singh & Perlmutter, 2000). I therefore wanted to investigate: which, if any, aspects of a new venture’s network capability can be related to its entrepreneurial orientation and competitive performance, which was the second research question. Overall, the empirical results showed a positive influence of network capability on a new venture’s entrepreneurial orientation. In other words, the better a new venture was in terms of initiating, developing and utilising its network relationships, the better its entrepreneurial strategy became. Having good partner knowledge and relational skills increased a new venture’s ability to act proactively, whereas its ability to find and initiate new relationships increased the venture’s propensity to take risks and to be innovative. The ability to find and initiate new relationships has not been measured in prior research. This is, however, an important part of a venture’s networking capability, because if a venture lacks insight concerning which new relationships to pursue this may result in a loss of possibilities to introduce other new and important partners into the network and so enhance the venture’s entrepreneurial opportunity (Kim & Aldrich, 2005). Moreover, as argued before, by cooperating with new relationships the new venture could obtain new and dissimilar resources, capabilities and information, hence increasing its innovativeness. Consequently, a new venture could be facilitated by its network capability in different strategic activities. For example, when a new venture develops its product/service it could be benefited by initiating new relationships resulting in higher risks and innovations crucial for the venture to find a unique and competitive position in the market. Then, when the new venture becomes established in the market and further develops its product/service, it could be favoured by having good relational skills and partner knowledge in order to act more proactively, and thus further increase its competitiveness. The three dimensions of a new venture’s entrepreneurial orientation may thus, in connection to the new venture’s network capability, be important in different activities for the achievement of competitive advantage.
Using a network capability in hostile environments, often faced by new ventures might also be facilitative since those environmental conditions often require higher levels of entrepreneurial orientation. This thorough exploration of the different dimensions of a network capability, which has previously been overlooked in studies of network capabilities, enhances the understanding of how this capability affects firm performance.

5.3 The effect of venture complexity

An important factor concerning new venture performance and competitiveness is, in this study, the internal and external complexity of the new venture. The third research question thus aims to achieve an understanding of: what, if any, impact does a venture’s complexity have on the relationship between aspects of a new venture’s network structure/capability, its entrepreneurial orientation and competitive performance? Instead of a moderating effect, the results showed mainly a direct effect of venture complexity on new venture performance. Internally complex new ventures obtained more competitive advantages from their network relationships, had higher levels of entrepreneurial orientation, and a better performance than non-complex ventures. Externally complex new ventures also exposed higher levels of entrepreneurial orientation. This indicates that when a new venture employs unfamiliar methods, a variety of tasks, and targets an immature market, it has a tendency to act in a more risk-taking, proactive and innovative manner in cooperation with partners to perform well. Non-complex new ventures with a high degree of routineness and mature markets might not experience difficulties in accomplishing their tasks, and to reach their customers by their own efforts, and thus do not use an entrepreneurial strategy or network partners.

However, there was a moderating effect among the different new ventures when using network capability. When a new venture had high internal complexity it was benefited by higher relational skills to increase its performance. This moderation effect indicates the importance of network relationships when a new venture becomes established and further develops its business. A new venture with high external complexity was on the other hand diminishing its performance when it had good coordination abilities. This implies that when a new venture is targeting an immature market and at the same time is coordinating activities and connecting partners and activities into a network of mutually supportive interactions (Walter et al., 2006), the venture’s performance could diminish due to the amount of time and resources required by this task.

The importance of contextual factors concerning the entrepreneurial orientation – performance link was also highlighted in a study of Spanish small and medium sized firms. Moreno and Casillas (2008) showed that Spanish small and medium sized firms developing new products or technologies satisfying new needs or
markets made more use of an entrepreneurial orientation than other firms. It was especially the firms’ innovative dimensions that encouraged them to use strategies aiming at growth. Relating these results to the venture complexity of new ventures, this would indicate that it is important to take into consideration both internal and external complexity when investigating the link between entrepreneurial strategies and firm performance.

5.4 A summary of new venture performance
As suggested at the beginning of this thesis, other factors besides dynamic and hostile characteristics of an environment might better explain what it is that affects the performance of new ventures (Wiklund & Shepherd, 2005; Lumpkin & Dess, 1996). In line with this suggestion, this research has used networking activities as such influencing factors. The results of this study show that a new venture does not achieve increased performance by networking alone, but by increasing the venture’s entrepreneurial orientation through network relationships and network capabilities enhanced performance could be realised. Entrepreneurial orientation is thus acting as a mediating factor between a new venture’s network structure, its network capability and performance. According to a resource-based view, a firm gains sustainable advantages over competitors by developing valuable, rare, and inimitable resources (Barney, 1991), which are most likely to be developed in entrepreneurial small firms (Alvarez & Barney, 2002). The results from this study accordingly suggest that engaging in networks and developing good network capabilities to improve the venture’s strategy could be viewed as tools for the firm to obtain sustainable competitive advantage that is difficult for competitors to imitate. Thus, the empirical results from this study are consistent with prior research stating that engagement in networks and entrepreneurial activities will improve firm performance and competitivenes.

However, venture complexity has direct effects on both entrepreneurial orientation and firm performance. This implies that since these ventures operate in a context where the market is immature and needs some education to be able to use the products offered, the complex new ventures have to use a more developed entrepreneurial strategy, in terms of being highly risk-taking, proactive and innovative, in order to become established in a market. An implication of the higher performance could be that the complex new ventures have a business which is not transparent and thus is difficult for competitors to imitate. In this case, the new venture obtains competitive advantage improving its performance.
5.5 Academic spin-offs – a specific type of complex ventures

The characteristics of complex new ventures are features that academic spin-offs could also have. Shane (2004) points out that academic spin-offs often (1) have a complex product development and process in order to transform their technology into products and services, (2) face uncertainty whether there is a market for their product, and (3) often utilise a technology push strategy, employing new and unknown products/services. In my pre-study of different type of start-up processes (presented in Paper 1) I found that academic spin-offs were, to a greater degree than non-academic start-ups, more complex since they targeted an immature market with new and often innovative products using a technology-push strategy in cooperation with other actors.

Hence, as a type of complex new venture, academic spin-offs differ from non-academic new ventures in the ways in which they utilise their network structure, network capability, and entrepreneurial orientation to increase firm performance. For example, academic spin-offs, due to their origin in university research, are often using unfamiliar methods and various tasks to accomplish their launch and establishment in the market. Shane (2004) states that academic spin-offs often experience high levels of uncertainty, during and after their product development; much depending on the changing technologies. Moreover, he points out that the academic spin-offs often have difficulties in finding customers needing their product/service, and that the customers who could need the product are often reluctant to change their supplier. Therefore academic spin-offs need to demonstrate the value of their product/service. These circumstances very much relate to the internal and external complexity of the new ventures in the current research. Due to being highly complex, the academic spin-offs thus need various partners in order to obtain access to vital competencies and resources so as to reach to their customers, to be competitive and to act more proactively, innovatively and risk-taking. In addition, because academic spin-offs need to cooperate in a network of partners, they also need to have good network capabilities. Since the academic spin-offs often commercialise a complex product or service, they also need to have good knowledge of their partners and how they can contribute, good relational skills so they can maintain their relationships, and an ability to find and initiate new relationships. Thus, by having high levels of network capability, academic spin-offs enhance their strategy and competitiveness when entering a market. Due to this complexity, academic spin-offs also employ a more entrepreneurial strategy when becoming established in a market.

It can for these reasons be argued that an academic spin-off acts in a more ‘Schumpeterian’ way of enterprising due to their high levels of entrepreneurial
orientation when targeting immature markets with complex products that require customer education, whereas the non-complex new ventures act more in a ‘Kirznerian’ way of enterprising where they offer known and easily produced products to mature markets. This difference could also have the result that academic spin-offs could achieve a higher performance because their business methods, consisting of network relationships, network capabilities and an entrepreneurial strategy, are more difficult for competitors to imitate.

If we accept that academic spin-offs can be regarded as a specific type of complex new venture, the two studies of new venture performance, namely the pre-study and the current study, result in added knowledge into the scientific field of new venture creation processes and entrepreneurial strategies. Starting with a qualitative study to explain the difficulties in a start-up process and then following up this study with a quantitative study, investigating the findings from the first study in a more general manner, provides a better understanding of the factors that influence the establishment and performance of new ventures. Combining these two methods has thus resulted in a more thorough, and possibly more valid, explanation of affecting factors that increase a new venture’s performance and survival when they are becoming established in a market.

5.6 Theoretical contributions

The research presented in this thesis contributes to theory in two main ways. First, the model of new venture performance developed in this thesis adds knowledge to research within new venture performance and survival. By adding contingency factors such as the venture complexity affecting new venture performance, a broader perspective of the determinants influencing the success and survival of new ventures is achieved. In addition to the different activities that a new venture has to undertake in order to become established (Lindholm Dahlstrand, 2004; Deakins, 1999), and the acquisition of network relationships possessing essential resources (Roininen, 2006; Cooper, 2002), a venture’s internal and external complexity significantly influences the success of the establishment and performance of a new firm. If a new venture uses unfamiliar methods and employs a variety of tasks (internal complexity), and targets a market with a novel product calling for long work experience to be carried through and customer education in order to be able to be used (external complexity), the firm tends to use more innovative, proactive and risk-taking strategies in order to become established in a market. This entry strategy is similar to the technology push approach that academic spin-offs use to become established in a market (Roininen, 2006). By pushing out new products/services for satisfying customers’ latent needs, academic spin-offs act proactively in their market orientation (Narver et al., 2004), which often requires specific resources best obtained through network relationships. A complex new venture is equally
favoured by network relationships in obtaining access to essential resources and capabilities for improving its entry strategy. If the venture, in addition, has a capability to coordinate activities and network relationships (a dimension of a firm’s network capability) it will be easier for the new venture to increase its performance through cooperation. This leads to the second theoretical contribution of this research.

By extending prior knowledge concerning entrepreneurial orientation with contextual factors affecting the performance and ultimately firm survival of new ventures, this research contributes added knowledge to how firms can attain competitive advantage (Wiklund & Shepherd, 2005) and improved performance (Lumpkin & Dess, 2001, 1996). As Lumpkin and Dess (1996) suggested, we need a contingency perspective emphasising other constructs besides environmental conditions to be able to explain and understand under what conditions new ventures can improve their entrepreneurial strategy and performance. This study shows that a new venture’s network structure and its network capability are significant for explanation of entrepreneurial orientation and its effect on firm performance. Another significant contextual factor is venture complexity. The more complex a venture is, the higher will its EO be. This study thus provides additional support for the entrepreneurial orientation – performance link found in previous research (c.f. Walter et al., 2006; Wiklund & Shepherd, 2005; Lumpkin & Dess, 2001).

5.7 Practical implications

New ventures have, as mentioned, restrained competitiveness due to their liability of newness (Baum et al., 2000; Stinchcombe, 1965) and limited in-house resources. It could thus be difficult for new ventures to become launched and established in markets relying only on available in-house resources. In addition, environmental conditions can also affect the competitiveness and survival of new ventures. If a new venture works in a hostile competitive environment, it needs to seek new opportunities and to act quickly. Thus, when a nascent entrepreneur is in the position of starting a new company, he or she should give some consideration to what are the factors that would facilitate the start-up. A new venture can use its network relationships, and its ability to make the most of these relationships, as tools to improve the firm’s entry strategy, and thus enhance its competitiveness and performance. By being proactive, innovative and risk-taking, a new venture can get ahead of its competitors. The results from this research thus give rise to several important implications for new venture owners/managers, and for policymakers and other actors supporting new venture creations.

This study shows that higher levels of entrepreneurial strategy, that is, the degree of innovativeness, proactiveness and risk-taking, increase a new
venture’s performance in its establishment. In addition, to increase a new venture’s entrepreneurial strategy, network relationships and the venture’s capability to manage these contacts are utilised. These results suggest that when an entrepreneur is about to enter a market, he or she should put time and effort into developing network relationships and a capability to initiate, develop and utilise those contacts. A suitable network structure and a capability to manage those relationships significantly increase a venture’s competitiveness, especially in turbulent and competitive environments. These implications are in line with Capalleras and Greene’s (2008) suggestions to Spanish de novo entrepreneurs, who are recommended to build relationships foremost with customers and suppliers in order to hasten the venture creation process and to achieve further growth.

Another interesting result is that a new venture that finds and initiates new contacts increases its propensity for risk-taking as well as its innovativeness, which in turn increases the firm performance. Initiating new relationships will also increase the venture’s willingness to take higher risk since the new venture can share the risk with its partner, which might be important in obtaining first mover advantages (Lee et al., 2001) and the development of breakthrough innovations (Henderson & Clark, 1990). It is, hence, essential for a new venture to seek cooperation with new contacts holding scarce or complementary resources in order to create new and novel products/services and to take necessary risks in order to perform better.

Similarly, this study showed that by acting proactively, that is to deal with expected occurrences or situations affecting the venture’s position in the market in advance, a new venture can be ahead of its competitors. Cooperation with firms possessing vital resources or capabilities can improve the new venture’s strategy and thus result in higher returns. In this situation, a new venture’s knowledge of its partners and its ability to adapt and respond to a variety of social situations and information from both inside and outside the firm, i.e. its relational skills, are important. Hence, new ventures should, early in their process of becoming established, engage in networks and build a network capability so as to be able to create superior entry strategies resulting in enhanced competitiveness and performance.

The tendency of using an entrepreneurial strategy and a network capability to increase the competitiveness of firms were shown to be more common among complex new ventures than among non-complex new ventures. Hence, entrepreneurs establishing a firm that employs unfamiliar methods and a variety of tasks, and/or targets customers with unknown products/services requiring customer education should, in particular, consider networking as a facilitative tool to improve its entrepreneurial strategy and ultimately its performance.
Kim and Aldrich (2005) state that the increase in support actions to create and sustain social networks puzzles some social scientists: ‘Social relations seem fundamental to everyone’s life and would appear to follow naturally from growing up in organised social settings’ (ibid., p. 3). If this is true, why do new venture owners/managers need help at all? And, do they not learn from the first collaboration or networking occasion as Walter et al. (2006) and Kale et al. (2002) among others suggest they would? A reasonable explanation is given by Kim and Aldrich (2005), who declare that networking activities require skills that cannot be based on routine. Therefore these skills, called network capabilities in this study, need to be adapted to each valuable network relationship. Different contacts require different skills due to the fact that the content of the relationships are different and the social constraints that might exist do not necessarily have to occur in another relationship. New ventures are just at the beginning of their experience in building network relationships, and would thus be particularly helped by activities supporting network formation. Recognising that such activities already are employed by some support organisations, this study underlines the importance of such support activities for new ventures offered by e.g. Technological Transfer Offices (TTOs), incubators, and other new venture support actors to encourage collaboration, especially among complex businesses, and thereby to extend their opportunities in becoming established in markets. In this way, the venture owner/manager not only gets to know potential partners, but he/she also is granted an opportunity to learn and develop his/her network capabilities and so enhancing the possibilities for benefiting from network relationships. However, some new ventures also early on employ people for extending the firm’s absorptive capability (Cohen & Levintahl, 1990), but the ventures often lack the ability or the resources to foster employees in essential entrepreneurial and network capabilities. These abilities are not common in educational institutions either, and thus new ventures would be benefited by further investments in public support promoting different network initiatives and capabilities.

### 5.8 Suggestions for further research

Future research should benefit from elaborating further on the topic of this thesis in order to attain comprehensive knowledge. A qualitative study for instance can be used as a source for richer descriptions and explanations towards a deeper understanding of new ventures’ competitiveness and performance, including affecting conditions and prerequisites. Quantitative investigations on the other hand would allow for further measurement and analysis of new ventures in specific business sectors, such as high versus low technological sectors, so as to increase the understanding of different influential factors on new venture performance and establishment. Moreover, longitudinal studies where new ventures can be followed contemporaneously over a longer time period would
also allow for more detailed exploration of the dynamics involved in the strategic decision-making process. Through these approaches, more thorough investigations of how network capability and network structure influences entrepreneurial orientation and firm performance can be made, as well as how the new ventures develop and utilise their capabilities to increase performance. I will below give examples of further research raised from this study.

One interesting issue for further research is the effect of a new venture’s network capability on its network structure. This link was at the beginning of this study suggested to have importance for a new venture’s performance and entrepreneurial strategy through network relationships, but it was not further investigated. Can a new venture’s capability to initiate, develop and utilise relationships influence the type of networks that the venture engages in? Is a new venture by means of its network capability better positioned to recognise entrepreneurial opportunities and what type of relationships it needs? Does a higher level of network capability facilitate the benefits from network relationships? And, do higher levels of network capability generate a more appropriate network structure for facilitating the desired outcome for the new venture?

Moreover, it would be interesting to investigate whether the results of this study have a bearing on established small companies or specific types of industries, such as high technology sectors and academic spin-offs. Although it appears to be difficult to identify academic spin-offs per se, this group of new ventures is still interesting for study further. Academic spin-offs often originate in technology and knowledge from university and research (cf. Shane, 2004; Nicolaou & Birley, 2003a), and they often target immature, international and volatile markets with unknown products (Shane, 2004), so could thus be considered as complex new ventures. New technology-based firms (NTBF) appear to have similar characteristics to those of academic spin-offs in their development and performance (Lindholm Dahlstrand, 2004; Lee et al., 2001), and thus these companies can also be considered as specific forms of complex ventures. Studies comparing these two types of new ventures and the functioning of their network structure would be interesting. For instance, do these ventures need specific resources and capabilities which they can obtain through network relationships in order to be competitive? Moreover, it is argued in the network literature that radical innovations demand interaction with universities, whereas incremental innovations are favoured from customer relationships in terms of reducing the risk of failure (Pittaway, Robertson, Munir, Denyer & Neely, 2004). Hence, do NTBFs need similar relationships to those required by academic spin-offs, or is this contextually dependent? Do network relationships facilitate the performance of new ventures or enhance their entrepreneurial orientation? And, which of the relationships is the most
important determinant for new venture performance? Research within this area is increasing, but there is still a need for more studies from different aspects in order to understand a complex phenomenon such as the creation of a university spin-off (Djokovic & Souitaris, 2008).

Additionally, the perspective of a venture’s internal and external complexity could also be investigated among all types of firms, new and established. In this study, complex new ventures used entrepreneurial orientation to a larger extent than non-complex new ventures did in their establishment of the venture. Therefore, it would be interesting to investigate whether this factor affects firm performance among all types of new ventures, and why so. In this way, a more detailed explanation can be achieved of how new venture performance is affected in the process of becoming established in a market. The fact that internally and externally complex ventures use entrepreneurial orientation to a larger extent also calls for more networking from the firm, as the results from this study pinpoint. Networking could however be resource-consuming due to the amount of time and effort spent on nurturing the contacts in pursuit of increasing the firm’s entrepreneurial orientation. As a result, firm performance could suffer in the short-run for firms such as academic spin-offs launching unknown products based on university research calling for cooperation and scarce resources. More studies on how different market orientations (i.e. external complexity) and the degree of routineness (i.e. internal complexity) affect a new venture’s entrepreneurial orientation and performance would therefore be interesting to elaborate on in relation to other ventures that can be referred to as complex ventures.

Finally, it would be interesting to adopt a learning perspective on new ventures’ processes of becoming established. For example, to investigate the question: How do new ventures build and learn to use networking and entrepreneurial capabilities? Assuming that all new ventures have the same level of inter-organisational relationships in their entrepreneurial endeavour, what is it that determines the success of developing and utilising a network capability and entrepreneurial orientation to a greater extent? Related to this is the function of previous learning and experiences, and thus an interesting question concerns whether habitual entrepreneurs behave any differently than novice entrepreneurs seeking for competitive advantage and increased performance when entering a (new) market?
References


Appendix A. Accompanying letter in Swedish

Företagets namn

Till företagsgrundaren/ledaren,

Hur kan vi stärka konkurrenskraften och lönsamheten hos nystartade företag? Nya företag i likhet med det du driver är viktiga för Sverige. Därför är kunskap om dessa nya företags marknads villkor och framgångsfaktorer av stort intresse, vilket är bakgrunden till att vi startat upp ett nytt forskningsprojekt vid Luleå tekniska universitet. Syftet är att undersöka hur nya svenska företag arbetar, och då med speciell betoning på hur man samverkar med andra företag och organisationer, för att sedan se om dessa arbetsätt kan kopplas till framgång för det enskilda företaget. Förutom att studien kommer att kunna ge en riktig beskrivning av nya företags situation förväntas den också ge värdefulla bidrag till utvecklingen av effektiva och rättvisa stödstrukturer på regional och nationell nivå. Dessa stödstrukturer ska genom t.ex. utbildning och rådgivning m.m. underlätta för alla nya företag, vilket därmed kan leda till ökad konkurrenskraft, ekonomisk tillväxt och ökad sysselsättning.


Företaget tillhör inte den tilltänkta målgruppen därför att:
☐ företaget startades eller registrerades under år 2003.
☐ företaget inte är aktiva.
☐ företaget inte omsätter minst 1 miljon kronor/år i dagsläget.
☐ nuvarande ledning har inte varit med om att bygga företaget från början.


Tack på förhand för Din medverkan!

Med vänliga hälsningar

Sari Roininen
Doktorand
TELEFON: 0920-49 28 24
E-POST: Sari.Roininen@ltu.se

---

Företagets namn: Kontaktperson:
☐ Ja, tack jag vill gärna ta del av resultaten från studien
Appendix B. Questionnaire in Swedish

Framgångsfaktorer för nyföretagande i Sverige

En studie av företag startade år 2003

Sari Roininen
Luleå tekniska universitet
Institutionen för industriell ekonomi och samhällsvetenskap
Entreprenörskap
971 87 Luleå

Hemsida: http://www.ltu.se/ies/d3879/Entreprenorskap
Telefon: 0920 - 49 28 24
Fax: 0920 - 49 21 60
E-post: Sari.Roininen@ltu.se
Anvisningar till ifyllandet av enkäten


När du tar ställning till följande frågor och påståenden, var vänlig och markera med ett kryss (x) i det alternativ som bäst motsvarar din uppfattning. I vissa fall kan fler svarsalternativ förekomma och då kryssar du för alla de alternativ du anser motsvara din uppfattning.

Det förekommer även frågor där du ska fylla i den siffra som bäst motsvarar din uppfattning i frågan. Dessa frågor rör sig om antal anställda och liknande eller en procentuell fördelning av marknadssegment till exempel.

På frågan som rör företagets affärsrelationer (nr: 27) fyller du i de alternativ som du anser bäst motsvara företagets relationer med andra i omgivningen vid den förfrågade tidpunkten.
A. Allmänna frågor

Med företaget menas här företaget som juridisk enhet, dvs. det företag som du är grundare i och enkäten är adresserad till.

<table>
<thead>
<tr>
<th>A1. Typ av bolag?</th>
<th>☐ Fristående bolag ☐ Ingår i löst företagsstruktur (t.ex. under holdingbolag) ☐ Ingår i en låt/väl integrerad företagsstruktur (t.ex. dotter i koncern) ☐ Franchise-företag ☐ Annat</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A2. Vilket område är företagets huvudsakliga verksamhetsområde?</th>
<th>Beräkna en procentuell fördelning mellan de givna alternativen. Den totala summan bör bli 100%.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tillverkning mot privatkonsumenter</td>
<td>företagskunder</td>
</tr>
<tr>
<td>Handel mot privatkonsumenter</td>
<td>företagskunder</td>
</tr>
<tr>
<td>Service mot privatkonsumenter</td>
<td>företagskunder</td>
</tr>
</tbody>
</table>

|--------------------------------------------------------|---------------|--------------------------------------------------|

<table>
<thead>
<tr>
<th>A4. Vilken eller vilka specialiskompetenser besitter styrelsen? (fler svarsalternativ möjliga)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Teknisk ☐ Marknadsinriktad ☐ Administrativ/ledning ☐ Annat, nämligen: ______________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A5. Antal anställda i företaget?</th>
<th>Första verksamhetsåret</th>
<th>I dagsläget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antal: ______</td>
<td>Antal: ______</td>
<td></td>
</tr>
</tbody>
</table>

|-------------------------------|---------------|--------------|

<table>
<thead>
<tr>
<th>A7. Har företaget registrerat några patent?</th>
<th>☐ Ja ☐ Nej</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A8. Vilken relation har företaget till universitet/högskola? (fler svarsalternativ möjliga)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Har ingen relation till universitet/högskola</td>
</tr>
<tr>
<td>☐ Minst en av dem som tog fram företagets bärande idé/produt hade vid företagsstarten en anställning på ett universitet/högskola</td>
</tr>
<tr>
<td>☐ Minst en av dem som tog fram företagets bärande idé/produt har fortfarande idag en anställning på ett universitet/högskola</td>
</tr>
<tr>
<td>☐ Minst en av dem som tog fram företagets bärande idé/produt hade vid företagsstarten en anställning på ett universitet/högskola</td>
</tr>
<tr>
<td>☐ Minst en av dem som tog fram företagets bärande idé/produt har fortfarande idag en anställning på ett universitet/högskola</td>
</tr>
<tr>
<td>☐ Minst en av dem som tog fram företagets bärande idé/produt hade vid företagsstarten en anställning på ett universitet/högskola</td>
</tr>
<tr>
<td>☐ Minst en av dem som tog fram företagets bärande idé/produt har fortfarande idag en anställning på ett universitet/högskola</td>
</tr>
<tr>
<td>☐ Företagets huvudsakliga produkt/service utvecklades inom ett universitet FoU och blev sedan kommersialiserad av företaget</td>
</tr>
<tr>
<td>☐ Företagets utvecklingsprocess var utvecklad i samverkan mellan ett universitet och företaget</td>
</tr>
<tr>
<td>☐ Företaget har under någon period sedan företagsstarten varit lokaliserat i en ”teknikby” som har koppling till ett universitet/högskola</td>
</tr>
<tr>
<td>☐ Annat, nämligen: _________________________________________________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A9. Vilken marknad betjänar företaget idag?</th>
<th>Beräkna en procentuell fördelning mellan de givna alternativen. Internationell ____ % Nationell ____ % Regional ____ % Lokal ____ % den totala summan bör bli 100%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A10. Vilken marknad har företaget som mål att rikta sig till om 5 år?</th>
<th>Beräkna en procentuell fördelning mellan de givna alternativen. Internationell ____ % Nationell ____ % Regional ____ % Lokal ____ % den totala summan bör bli 100%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A11. Vilken är dina roll i företaget när det gäller ägande och ledning?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Ägare tillsammans med ___ andra ägare ☐ Ensam ägare ☐ Ej ägare</td>
</tr>
<tr>
<td>☐ Företagsledare tillsammans med ___ andra ledare ☐ Ensam företagsledare</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A12. Vilken erfarenhet har du från tidigare företagsledningar? ☐ Har tidigare lett ett företag</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Har tidigare lett ett flertal olika företag ☐ Har inte lett företag tidigare</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A13. Vilken erfarenhet har du från tidigare företagsstartar? ☐ Har tidigare startat ett företag</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Har tidigare startat ett flertal företag ☐ Har inte startat företag tidigare</td>
</tr>
</tbody>
</table>
A14. Vilken utbildningsnivå har du? □ Grundskola
Gymnasium inom: □ Teknik □ Ekonomi □ Data/IT □ Annat, nämligen: ____________________
Universitet/högskola inom: □ Teknik □ Ekonomi □ Data/IT □ Annat, nämligen: ____________________

A15. Vilket år är du född? __________

B. Nedan följer frågor om företagets mål och verksamhetsresultat.

<table>
<thead>
<tr>
<th>Första verksamhetsåret</th>
<th>Senaste verksamhetsåret</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1. Hur stor var företagets omsättning?</td>
<td>Tkr:</td>
</tr>
<tr>
<td>I vilken grad har företaget lyckats med följande verksamhetsmål? Ange svar på en skala från -3 till +3 där utfallet varit -3 = betydligt sämre, 0 = varken bättre eller sämre, eller +3 = betydligt bättre</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B2. Avkastning/ vinst</th>
<th>I förhållande till egna förväntningar</th>
<th>I förhållande till andra företag i branschen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B3. Tillfredsställa kunderna</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>B4. Skapa lojala kunder</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>B5. Försäljningstillväxt på etablerade marknader</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>B6. Marknadstillväxt, dvs. försäljning till nya marknader</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>B7. Etablera konkurrenskraftiga produkter/tjänster</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>B8. Skapa effektivitet i våra metoder/processer (produktivitet)</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>B9. Förmåga att utveckla nya metoder/processer</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>B10. Förmåga att utveckla nya produkter/tjänster</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>B11. Attrahera personal med erforderlig kompetens</th>
<th></th>
</tr>
</thead>
</table>

C. Nedan följer frågor angående företagets relationer med andra organisationer.

I denna sektion handlar frågorna om företagets relationer med andra affärspartners. Med **affärspartners** avses andra företag, leverantörer, kunder, myndigheter eller universitet som 1) företaget har **återkommande** kontakt med samt 2) **bidragit** till företagets verksamhet och **konkurrensfördelar**. Med **litet företag** avses företag med färre än 50 anställda.

<table>
<thead>
<tr>
<th>Kategori</th>
<th>Första verksamhetsåret</th>
<th>I dagsläget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Litet företag som är vår kund (LFK)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Litet företag som är vår leverantör (LFL)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Litet företag som är vår partner (LFP)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Stort företag som är vår kund (SFK)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Stort företag som är vår leverantör (SFL)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Stort företag som är vår partner (SFP)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Myndighet som är vår kund (MK)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Myndighet som är vår partner (MP)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Universitet/högskola som är vår kund (UK)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
<tr>
<td>Universitet/högskola som är vår partner (UP)</td>
<td>Antal: _____</td>
<td>Antal: _____</td>
</tr>
</tbody>
</table>

Lista de för företaget viktigaste kontaktarna på nästa sida (max åtta stycken) för att beskriva relationerna närmare. **Du behöver inte skriva relationens namn utan kan kategorisera dem efter ovan skrivna mall tillsammans med ett löpnummer.** Om samverkan t.ex. skett med fler små företag som är kunder kan dessa kategorier efterföljas av en numrerings (tex. LFK1, LFK2). Se exempel på nästa sida.
C2. Kategorisera de konkurrenskraftiga kontaktorna. Vi har avsedd att få en komplementär bild på de konkurrenskraftiga projektbesätningarna, samt dem som är lokalisera de på andra områden.

<table>
<thead>
<tr>
<th>Konkurrenskraft</th>
<th>Lokalisering</th>
</tr>
</thead>
<tbody>
<tr>
<td>I regionen</td>
<td>Ej i regionen</td>
</tr>
<tr>
<td>I Sverige</td>
<td>Utomlands</td>
</tr>
</tbody>
</table>

C3. Vilken eller vilka kompetenser besitter den nämnda kontakten?

- Annat
- Personella
- Ställningssätt
- Ålder
- Sjukvård
- Lokaler, maskiner och dylikt
- Expertis och rådgivning
- Finansiering

C4. Vilken eller vilka resurser besitter den nämnda kontakten som ert företag har behov av?

- Annat
- Personella avdrag och ledning
- Metoder och processer
- Produkter och tjänster
- Marknad och försäljning
- El/ Energianstånd
- Lärmansäter
- Medellivet
- och andra områden.

C5. Uppskatta det antalet gånger ni har haft kontakt med den nämnda kontakten det senaste året? Ange en siffra motsvarande det uppskattade antalet.

<table>
<thead>
<tr>
<th>Antal gånger</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>

C6. I vilken grad har kontakten lett till konkurrensfördelar av något slag för ert företag?

- Angera en siffra motsvarande graden av konsekvensen

C7. Hur stor är förtroendet/tilliten mellan företaget och den nämnda kontakten?

- Angera en siffra motsvarande graden av konsekvensen

C8. Hur har kontakten betydelse för företagets prestationer förändrats över tid?

- Angera en siffra motsvarande graden av konsekvensen

Ex: LFK1 x x x x 2
D. Nedan följer frågor angående företagets hantering av viktiga affärssrelationer.
I denna sektion handlar frågorna om företagets hantering och planering av de samverkansrelationer som företaget har återkommande kontakter med (benämnda som partners i frågorna). Bedöm svaren efter hur företaget som regel agerar vid hanteringen av dessa.

I vilken grad stämmer följande påståenden företagets hantering av partners och relationer?
Ange svar på en skala från 1 till 7 där 1 - påståendet stämmer inte alls, 7 - påståendet stämmer fullständigt.

<table>
<thead>
<tr>
<th>Första verksamhetsåret</th>
<th>I dagsläget</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1. Vi analyserar vad vi vill uppnå med respektive partner.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>D2. Vi utvecklar relationer med varje enskild partner utifrån vad de har att erbjuda.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D3. Vi diskuterar regelbundet med våra partners om hur vi kan stödja varandra.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D4. Vi har förmågan att bygga goda personliga relationer med våra partners.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D5. Vi kan göra affärer på ett flexibelt sätt med våra partners.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D6. Vi kan oftast lösa problem konstruktivt med våra partners.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D7. Vi är hela tiden öppna för nya relationer med nya partners.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D8. Vi har förmågan att initiera en ömsesidig relation med nya partners.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D9. Vi har ögonen öppna för att hitta nya partners.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D10. Vi känner till våra partners marknader.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D11. Vi känner till våra partners produkter/arbetssätt/service.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>D12. Vi känner till våra partners styrkor och svagheter.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
</tbody>
</table>

E. Nedan följer frågor angående företagets inställning till omgivningen och verksamheten.
I denna sektion handlar frågorna om hur företaget agerar med avseende på konkurrens och eventuella möjligheter på marknaden.

I vilken grad gäller följande påståenden företagets sätt att arbeta? Ange svar på en skala från 1 till 7 där 1 = påståendet stämmer inte alls, 4 = är neutral och 7 = påståendet stämmer fullständigt.

<table>
<thead>
<tr>
<th>Första verksamhetsåret</th>
<th>I dagsläget</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. Vi ser ett vågat agerande som en nödvändighet för att uppnå företagets mål.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>E2. På detta företag har vi en benägenhet att delta i projekt som medför hög risk (med möjlighet till hög avkastning).</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>E3. Vid beslut som innefattar osäkerhet antar företaget en djärv inställning för att maximera utnyttjandet av möjligheter.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>E4. På detta företag tenderar vi att ligga steget före konkurrenterna vid introduceringen av nya produkter och idéer.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>E5. Företaget initierar ofta ageranden som konkurrenterna sedan kopierar.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>E6. Företaget är oftast först med att introducera nyheter (såsom nya produkter eller service, nya sätt att producera dessa eller nya administrativa metoder).</td>
<td>□ □ □ □ □ □ □</td>
</tr>
</tbody>
</table>
E7. I företaget är forskning och utveckling, teknisk ledning och innovationer viktiga för att nå företagets mål.

E8. Förändringar i eller utvecklingen av företagets produkter har varit genomgripande för att nå konkurrensfördelar.

E9. Ett av företagets mål är att ta fram ett flertal nya produkter under de närmaste tre åren.

E10. De resurser och verktyg företaget har idag bestämmer vilka mål vi kan sätta.

E11. Företaget anskaffar de resurser och medel som behövs för att nå de långsiktiga målen.

E12. I företaget är vi bra på att utnyttja oförutsedda händelser till vår fördel.

E13. I företaget är vi bra på att planera för att undvika oförutsedda händelser.

E14. Våra sammantagna erfarenheter från både misstag och framgångar påverkar starkt företagets framtid. 

E15. Företaget planerar var utförligt i förväg för att skapa framgång och undvika misslyckanden.

F. Nedan följer frågor gällande företagets interna och externa förhållanden.

I denna sektion handlar frågorna om företagets huvudsakliga arbetsuppgifter, interna relationer, produkter och/tjänster, behov av resurser samt företagets påverkande omgivning.

I vilken grad gäller följande påståenden företagets typ av arbetsuppgifter och produkter/tjänster? Ange svar på en skala från 1 till 7 där 1 = påståendet stämmer inte alls, 7 = påståendet stämmer fullständigt.

<table>
<thead>
<tr>
<th>Första verksamhetsåret</th>
<th>I dagsläget</th>
</tr>
</thead>
<tbody>
<tr>
<td>E7. I företaget är forskning och utveckling, teknisk ledning och innovationer viktiga för att nå företagets mål.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>E8. Förändringar i eller utvecklingen av företagets produkter har varit genomgripande för att nå konkurrensfördelar.</td>
<td>□□□□□□□□</td>
</tr>
<tr>
<td>E9. Ett av företagets mål är att ta fram ett flertal nya produkter under de närmaste tre åren.</td>
<td>□□□□□□□□</td>
</tr>
<tr>
<td>E10. De resurser och verktyg företaget har idag bestämmer vilka mål vi kan sätta.</td>
<td>□□□□□□□□</td>
</tr>
<tr>
<td>E11. Företaget anskaffar de resurser och medel som behövs för att nå de långsiktiga målen.</td>
<td>□□□□□□□□</td>
</tr>
<tr>
<td>E12. I företaget är vi bra på att utnyttja oförutsedda händelser till vår fördel.</td>
<td>□□□□□□□□</td>
</tr>
<tr>
<td>E13. I företaget är vi bra på att planera för att undvika oförutsedda händelser.</td>
<td>□□□□□□□□</td>
</tr>
<tr>
<td>E14. Våra sammantagna erfarenheter från både misstag och framgångar påverkar starkt företagets framtid.</td>
<td>□□□□□□□□</td>
</tr>
<tr>
<td>E15. Företaget planerar var utförligt i förväg för att skapa framgång och undvika misslyckanden.</td>
<td>□□□□□□□□</td>
</tr>
</tbody>
</table>

F1. Företagets huvudsakliga arbetsuppgifter är i stor utsträckning av återkommande karaktär.

F2. Företagets huvudsakliga arbetsuppgifter kan i huvudsak ses som rutinuppgifter.

F3. Företagets huvudsakliga arbetsuppgifter kan ofta genomföras genom att tillämpa välkända och beprövade arbetsätt.

F4. Företagets huvudsakliga arbetsuppgifter kräver lång erfarenhet av anställda för att kunna genomföras.

F5. Företagets produkt/tjänst är välkända och beprövade.

F6. För att kunden ska kunna tillgodogöra sig vår produkt/tjänst krävs viss utbildning i samband med försäljningen.

F7. Företagets produkt/tjänst tillgodosier behov som marknaden ännu inte är medveten om.
I vilken grad gäller följande påståenden företagets interna relationer? Ange svar på en skala från 1 till 7 där 1 = påståendet stämmer inte alls, 7 = påståendet stämmer fullständigt. År företaget ett enmansföretag gå vidare till fråga 72.

<table>
<thead>
<tr>
<th>Första verksamhetsåret</th>
<th>I dagsläget</th>
</tr>
</thead>
<tbody>
<tr>
<td>F8. Inom företaget har vi regelbundna möten för varje projekt.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>F9. Inom företaget utvecklar de anställda informella kontakter sinsemellan.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F10. Inom företaget ger ledning och anställda ofta återkoppling till varandra.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

I vilken grad gäller följande påståenden företagets behov av resurser? Ange svar på en skala från 1 till 7 där 1 = påståendet stämmer inte alls, till 7 = påståendet stämmer fullständigt.

<table>
<thead>
<tr>
<th>Första verksamhetsåret</th>
<th>I dagsläget</th>
</tr>
</thead>
<tbody>
<tr>
<td>F11. I företaget har vi stort behov av extern finansiering</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>F12. I vårt företag behöver vi yrkeskicklig arbetskraft</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F13. I vårt företag har vi stort behov av materiella tillgångar</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F14. I vårt företag har vi behov av specifik expertis/rådgivning</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F15. Produkterna/tjänsterna i vårt företag är högteknologiska</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F16. Processerna/metoderna i vårt företag är högteknologiska</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F17. I vårt företag har personalen hög teknologisk kompetens</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
</tbody>
</table>

I vilken grad gäller följande påståenden företagets omgivning? Ange svar på en skala från 1 till 7 där 1 = påståendet stämmer inte alls, 7 = påståendet stämmer fullständigt.

<table>
<thead>
<tr>
<th>Första verksamhetsåret</th>
<th>I dagsläget</th>
</tr>
</thead>
<tbody>
<tr>
<td>F18. Konkurser i vår bransch är vanligt förekommande.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>F19. Våra konkurrenters ageranden är svåra att förutsäga.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F20. Kundernas behov och efterfrågan är svårt att förutsäga.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F22. Det finns ett stort hot i form av minskade marknader för vår huvudprodukt.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F23. Konkurrensen om att utveckla nya produkter är stor i vår bransch.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F24. Konkurrenssituationen är liknande för alla våra produkter och marknader.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F25. Teknikutvecklingen i vår bransch är snabb.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐ ☐</td>
</tr>
<tr>
<td>F26. Egna synpunkter du vill framföra:</td>
<td></td>
</tr>
</tbody>
</table>

Tack för din medverkan!

Löpnummer: (För statistisk bearbetning)
Appendix C. Accompanying letter in English

The name of the business

To the business owner/manager,

How can we strengthen the competitiveness and profitability among new ventures? New ventures, like yours, are important for Sweden. Therefore more knowledge of the market conditions for these new ventures as well as their success factors are of great interest. This is also the background to a new research project in Luleå University of Technology. The purpose of this research is to study how new Swedish ventures work, particularly in collaboration with other organisations and associations, to see if these working methods can be related to improved performance of the company. In addition to an accurate description of the new ventures’ conditions, this study is also expected to provide valuable contributions to the development of reasonable and effective support activities on a regional and national level. These activities are intended to increase the competitiveness of new ventures through e.g. education and counselling, and ultimately to improve economic growth and employment in Sweden.

This study thus targets companies that were started and registered during 2003, which are still active, and have a turnover of at least 1 million SEK today; and the respondent of this inquiry should also have been active in the start-up process of the company. The selection of this company is randomly made from an official register of companies started in 2003. As mentioned, the results from this research have great practical value for both new ventures as well as policymakers, and it is thus very important that you will give your time to fill in the questionnaire. If you believe that your company does not belong in the target group, please let us know by indicating one or more of the explanations from the alternatives listed below and by returning the answer to us in the enclosed post-free envelope.

The company does not belong to the target group because:

- the company was not started or registered in 2003. State the correct year: ______
- the company is no longer active. State the year when the firm ceased with its business: ______
- the company does not have a turnover of at least 1 million SEK/year today. State the approximate turnover: ______SEK
- the company’s present management was not involved in the start-up process of this company.

The questions will consider your company’s business, your perceptions about recurrent contacts with actors within your network, and strategic choices vital for the company’s business. Since all questions in the questionnaire are significant to make this research meaningful it is important that you give your answers in as detailed a way as possible. You can then return the questionnaire in the enclosed post-free envelope. All the answers will be confidential and will only be used in statistical analysis and statements. The identification number that each questionnaire is provided with is for coding purposes only, and to avoid that you receive several reminders. We will be needing your answer as soon as possible, but at the latest by 31st of May 2007. If you, or someone else in the company, would like to participate in this research free of charge (which is expected to be completed in the autumn of 2008), please just fill in the coupon below and send it together with the questionnaire. Please confirm to us the name of the person to whom that the report should be sent. If you have any questions, please get in contact with me, Sari Roininen (contact information is shown below).

We would like to thank you in advance for your participation.

Kind regards

Sari Roininen  Håkan Ylinenpää
PhD student  Professor and head of the project
Phone: 0920-49 28 24
E-mail: Sari.Roininen@ltu.se

The company name:  Contact person:

☐ Yes please, I would very much like to have the results from the study.
Appendix D. Questionnaire in English

Success factors for new ventures in Sweden

A study of companies started in year 2003

Sari Roininen
Luleå University of Technology
Entrepreneurship
Dept. of Business Administration and Social Sciences
Luleå University of Technology
SE-97187 LULEÅ
Sweden
Fax: +46-920-49 21 60
Webpage: http://www.ltu.se/ies/d3879/Entreprenorskap
E-mail: Sari.Roinien@ltu.se
Directions for completing the questionnaire

The inquiry is divided into six sections, each relating to different parts of the company’s business at the present time as well as during the first year of operation. Where necessary, each section in the questionnaire starts with an introduction explaining how to fill in the questions and which area of the business we are interested in.

When you answer the questions or statements, please mark your answer with an ‘x’ in the appropriate category that best fits your opinion. In some cases multiple answers are possible, and then you can mark several appropriate categories.

There are also questions where you should answer with a figure that best fits your opinion asked for. These questions concern for example numbers of employees and the like, or estimations of the company’s market segments in percentages.

With regard to the question regarding diverse business relationships of the company, please fill in the options that best correspond to your company’s relationships with other organisations at the present time.
A. General questions

The definition of a company is here the legal unit, namely the company that you are the founder of and which this survey is addressed to.

<table>
<thead>
<tr>
<th>A1. Type of company?</th>
<th>□ Independent company □ Loosely linked to a group (ex. Holding company) □ Part of an integrated company (ex. Affiliated company) □ Franchise-company □ Other</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A2. What are the company's main domains? Specify the percentages for the given choices: the total sum should add up to 100%.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing towards private customers _____ business customers _____</td>
</tr>
<tr>
<td>Trading towards private customers _____ business customers _____</td>
</tr>
<tr>
<td>Service towards private customers _____ business customers _____</td>
</tr>
</tbody>
</table>

| A3. How many regular members are on the board? _____ from which _____ are external (that is, not employed in the daily operations or a family member). |

<table>
<thead>
<tr>
<th>A4. Which specific competence areas do the company's board members possess? (multiple answers are possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Technology □ Marketing □ Administration/management □ Other, namely: ____________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A5. Number of employees?</th>
<th>First year of operation.</th>
<th>Last year of operation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr:</td>
<td>Nr:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A6. Number of employees with a university degree?</th>
<th>Nr:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A7. Has the company registered patents? □ Yes □ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, how many patents were registered during the following years?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A8. What is your company’s relationship to universities? (multiple answers are possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ No relationship at all □ At least one of the persons who created/developed the company’s main product/service had a tenure at a university when starting the company</td>
</tr>
<tr>
<td>□ At least one of the persons who created/developed the company’s main product/service still has tenure at a university</td>
</tr>
<tr>
<td>□ At least one of the company owners had a tenure at a university when starting the company</td>
</tr>
<tr>
<td>□ At least one of the company owners still has tenure at a university</td>
</tr>
<tr>
<td>□ At least one of the company managers had a tenure at a university when starting the company</td>
</tr>
<tr>
<td>□ At least one of the company managers still has tenure at a university</td>
</tr>
<tr>
<td>□ The idea of the main product/service originates from university research</td>
</tr>
<tr>
<td>□ The company’s main product/service was developed within university research and then commercialised by this company</td>
</tr>
<tr>
<td>□ The company’s main product/service was developed in cooperation with a university</td>
</tr>
<tr>
<td>□ The company has been located in a Science Park connected to a university for some time after the start-up</td>
</tr>
<tr>
<td>□ Something else, namely: ____________________________________________________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A9. Which markets are you currently operating in? Specify the percentages for the given choices. International _____% National _____% Regional _____% Local _____%; the total sum should add up 100%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A10. Which markets do you aim to target within 5 years from now? Specify the percentages as above. International _____% National _____% Regional _____% Local _____%; the total sum should add up 100%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A11. What is your role in the company regarding ownership and management?</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ I own the company together with ____ (nr) other owners □ I am a single owner □ I do not own the company</td>
</tr>
<tr>
<td>□ I manage the company with ____ (nr) other managers □ I am the only manager of the company</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A12. What is your previous experience in management? □ I have managed one company previously □ I have managed several companies previously □ I have not managed any company previously</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A13. What is your previous experience in start-ups? □ I have started one company previously □ I have started several companies previously □ I have not started any company previously</th>
</tr>
</thead>
</table>
B. The following questions consider the company’s goals and performances.

<table>
<thead>
<tr>
<th>B1. The company’s turnover?</th>
<th>First year of operation</th>
<th>Last year of operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thousand SEK:</td>
<td>Thousand SEK:</td>
<td></td>
</tr>
</tbody>
</table>

To what extent has the company achieved the following goals? Answer by marking an ‘x’ in the appropriate category that best fits your opinion. -3 = much worse  0 = neither worse nor better  +3 = much better

<table>
<thead>
<tr>
<th>B2. Our profit level</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B3. Our level of customer satisfaction</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B4. Our level regarding customer loyalty</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B5. Our sales growth in established markets</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B6. Our market growth in new market</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B7. The competitiveness of our products/services</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B8. The efficiency in our processes (productivity)</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B9. Our ability to develop new methods and process</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B10. Our ability to develop new products and services</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B11. Our ability to employ personnel with the necessary skills/competence</th>
<th>In relation to your own expectations</th>
<th>In relation to others within your main industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3  0  +3</td>
<td>-3  0  +3</td>
</tr>
</tbody>
</table>

C. The following questions consider the company’s relations with other organisations.

In this section we are interested in your company’s relationships with other business partners. By business partner, we mean other companies, suppliers, customers, government agency or university that 1) your company has frequent contact with, and 2) that contributes to your company’s business goals and competitive advantage. By a small firm we mean less than 50 employees. Report for each category below the number of companies/organisations that your company has contact with and that fulfil the above two criteria.

<table>
<thead>
<tr>
<th>C1. How many strategic partners does your firm have in each category?</th>
<th>First year of operation</th>
<th>Present-situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Number:</td>
<td>Number:</td>
</tr>
<tr>
<td>Small firms that are customers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small firms that are suppliers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small firms that are partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large firms that are customers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large firms that are partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government agencies that are customers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government agencies that are partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Universities that are customer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Universities that are partner</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

List the most important contacts on the next page (a maximum of eight) to describe the relationships in more detail. You do not need to write the names of the organisations, only categorise them as above together with a number. If you have collaborated with many small firms that are customers you should just label them SFC1, SFC2 and so on. See the example on the next page.
C2. Categorise those relationships that are most important for the company's competitiveness, and where they are located.

<table>
<thead>
<tr>
<th>Ex. SFC1</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>C3. What or which competencies does the mentioned relationship possess?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing/sales</td>
</tr>
<tr>
<td>Financing</td>
</tr>
<tr>
<td>Personal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C4. What or which resources that the company needs does the mentioned relationship possess?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicate by putting an 'x' in the appropriate category that best correlates to your motives of the contact.</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C5. How frequently did you have contact with the mentioned relationship during the last year?</th>
</tr>
</thead>
<tbody>
<tr>
<td>State a number corresponding to the assessed number of times you have had contact.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C6. To what extent has the relationship resulted in enhanced competitive advantages for the company?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade your estimation between 1 – none at all, to 7 – to a large extent.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C7. How great is the trust between the company and the mentioned relationship?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade your estimation between 1 – no trust at all, to 7 – very much trust.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C8. How has the relationships' importance for the company's achievements changed over time?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade your estimation between 1 – considerably reduced importance, to 7 – considerably increased importance.</td>
</tr>
</tbody>
</table>

Small firms that are customers (SFC)  Small firms that are suppliers (SFS)  Small firms that are partners (SFP)  
Large firms that are customers (LFC)  Large firms that are suppliers (LFS)  Large firms that are partners (LFP)  
Government agencies that are customers (GC)  Government agencies that are partners (GP)  
Universities that are customers (UC)  Universities that are partners (UP)
D. The following questions consider the company’s management of important partners.

In this section the questions deal with how your company manages inter-firm relationships with those companies that you have frequent contacts with (i.e. the type of partners that you have reported in the previous section). Indicate how your company usually acts or takes action in managing these relationships by putting an ‘X’ in the appropriate category.

<table>
<thead>
<tr>
<th>Statement</th>
<th>First year of operation</th>
<th>Present-situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1. we analyse what we would like and desire to achieve with which partner.</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>D2. we develop relations with each partner based on what they can contribute.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D3. we discuss regularly with our partners how we can support each other.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D4. we have the ability to build good personal relationships with business partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D5. we can deal flexibly with our partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D6. we almost always solve problems constructively with our partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D7. we are constantly open to new relations with new partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D8. we have the ability to initiate a mutual relationship with new partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D9. we are alert to finding new partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D10. we know our partners’ markets.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D11. we know our partners’ products/services.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D12. we know our partners’ strengths and weaknesses.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

E. The following questions consider the company’s attitude towards its environment and working conditions.

We are here interested in how the company acts concerning your competition and opportunities in the market. Answer by marking an ‘X’ in the appropriate category that best fits your opinion.

<table>
<thead>
<tr>
<th>Statement</th>
<th>First year of operation</th>
<th>Present-situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1. we see bold, wide-ranging acts are necessary to achieve the company’s objectives.</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>E2. we have a strong aptitude for high risk projects (with opportunities for high returns)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3. we typically adopt a bold posture when confronted with decisions involving uncertainty, to maximise exploitation of opportunities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E4. we tend to be ahead of competitors in introducing new products and ideas.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E5. we typically initiate actions which competitors then respond to.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
E6. we are often the first to introduce new products and services, new ways to produce these, or new administrative methods.

E7. we have a strong emphasis on R&D, technological leadership, and innovation.

E8. changes in product or service lines have usually been quite dramatic to achieve competitive advantage.

E9. one of the main goals is to launch many new lines of products/services in the next 3 years.

E10. the resources we possess presently determine which goals we set.

E11. we acquire the means necessary to achieve our long-term goals.

E12. we are good at leveraging surprises into new opportunities.

E13. we are good at avoiding unpleasant surprises by planning in advance.

E14. experiences from both success and failure strongly influence the company’s future actions.

E15. we plan carefully in advance to attain success and avoid failure.

F. The following questions consider the company’s internal and external circumstances.

We are here interested in the company’s main work-tasks, internal relations, products/services, resource needs and environmental conditions. Answer by marking an ‘\(\times\)’ in the appropriate category that best fits your opinion.

<table>
<thead>
<tr>
<th>To what extent do the following statements agree with the company’s working conditions and products/services?</th>
<th>1 = strongly disagree</th>
<th>4 = neutral</th>
<th>7 = strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year of operation</td>
<td>Present-situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F1. The company’s main work-tasks consist of repetitive activities.</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>F2. The company’s main work-tasks consist mainly of everyday tasks.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F3. The company’s main work-tasks are accomplished by established procedures and practices.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F4. The company’s main work-tasks require years of experience to be accomplished.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F5. The company’s product/service is well-known and tested.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F6. To be able to utilise the company’s product/service, the customer needs some education in connection to the sales.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F7. The company’s product/service meets undiscovered customer needs.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To what extent do following statements agree with the company’s internal relations? Answer by marking an ‘X’ in the appropriate category that best fits your opinion. 1 = strongly disagree, 4 = neutral, 7 = strongly agree. If the company is a one-man firm please go to question number F11.

<table>
<thead>
<tr>
<th>In our company…</th>
<th>First year of operation</th>
<th>Present-situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>F8. …we have regular meetings for every project.</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>F9. …employees develop informal contacts among themselves.</td>
<td>□ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F10. …managers and employees often give feedback to each other.</td>
<td>□ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □</td>
</tr>
</tbody>
</table>

To what extent do following statements agree with company’s need for resources? Answer by marking an ‘X’ in the appropriate category that best fits your opinion. 1 = strongly disagree, 4 = neutral, 7 = strongly agree.

<table>
<thead>
<tr>
<th>In our company…</th>
<th>First year of operation</th>
<th>Present-situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>F11. …we have a great need of external financing.</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>F12. …we have a great need of skilled labour.</td>
<td>□ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F13. …we have a great need of material resources.</td>
<td>□ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F14. …we have a great need of specific expertise/guidance.</td>
<td>□ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F15. …the products/services are high technological.</td>
<td>□ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F16. …the processes/methods are high technological.</td>
<td>□ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F17. …the employees have a high level of technological competence.</td>
<td>□ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □</td>
</tr>
</tbody>
</table>

To what extent do following statements correspond agree with the company’s environment? Answer by marking an ‘X’ in the appropriate category that best fits your opinion. 1 = strongly disagree, 4 = neutral, 7 = strongly agree.

<table>
<thead>
<tr>
<th>First year of operation</th>
<th>Present-situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>F18. Bankruptcy is common in our industry.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>F19. The actions of our competitors are unpredictable.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F20. The customer’s needs and demands are hard to foresee.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F21. In our industry the risks are high and one poor decision can threaten the company’s survival.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F22. There is a great threat of a declining market for our core product</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F23. The competition regarding development of new products is fierce.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F24. The competition in the market varies, depending on the products and services</td>
<td>□ □ □ □ □ □ □</td>
</tr>
<tr>
<td>F25. The technology development is rapid.</td>
<td>□ □ □ □ □ □ □</td>
</tr>
</tbody>
</table>

F26. Other viewpoints you would like to share:

Thank you for participating!

ID number: [ ]
(Only for statistical analysis)
Part Two
Paper 1:

Schumpeterian versus Kirznerian entrepreneurship – a comparison of academic and non-academic new venturing

Sari Roininen and Håkan Ylinenpää

Forthcoming in Journal of Small Business and Enterprise Development
SCHUMPETERIAN VERSUS KIRZNERIAN ENTREPRENEURSHIP – A COMPARISON OF ACADEMIC AND NON-ACADEMIC NEW VENTURING

Sari Roininen
Sari.Roininen@ltu.se

and

Håkan Ylinenpää
Hakan.Ylinenpaa@ltu.se

Affiliation:
Entrepreneurship
Dept. of Business Administration and Social Sciences
Luleå University of Technology
SE-97187 LULEÅ
Sweden
Fax: +46-920-49 21 60
SCHUMPETERIAN VERSUS KIRZNERIAN ENTREPRENEURSHIP – A COMPARISON OF ACADEMIC AND NON-ACADEMIC NEW VENTURING

Abstract

Purpose – Identifying how different modes of resource configuration, entry strategy and product/market characteristics affect new ventures’ start-up processes as well as outcomes in terms of firm growth and revenues.

Design/methodology/approach – Case studies of three academic spin-offs and three non-academic new ventures is employed as a base for analytical generalisation.

Findings – Non-academic ventures and academic spin-offs have different bases for their venture creation and follow different strategies to enter their specific markets. Academic spin-offs are to a larger extent innovative, product-oriented and enter their target markets employing a technology/science-push strategy which requires considerable resources and partner cooperation to manage. The non-academic ventures, on the contrary, exploit emerging opportunities on the market through a market-pull strategy relying mainly on offerings already known to the market and building on their own, in-house resources.

Research limitations – Future research should benefit from investigating factors and conditions affecting different ventures’ start-up process by utilizing qualitative, in-depth approaches as well as quantitative approaches and a more robust database.

Practical implications – Venture creation processes are not uniform but dependent on situational and contextual factors. Overall, academic spin-offs come forward as examples of Schumpeterian entrepreneurship characterised by exploration and innovation, while the more ‘Kirznerian’ and non-academic start-ups primarily recognise and exploit upcoming market opportunities based on resources they control. The results highlight challenges for nascent entrepreneurs as well as for policy makers supporting new venture creation.

Originality/value – A comparison highlighting critical events, resource configurations and environmental conditions of different start-up processes depending on the new ventures’ origin.

Keywords – new venture creation, academic spin-off, start-up process, entry strategy, resource configuration

Article type – Research paper
INTRODUCTION
Although previously studied, one of the least understood features of modern societies is still the process of creating a new venture (Reynolds and White, 1997). Even less studied is the phenomenon that this article highlights: differences between different categories of start-ups emanating from different environmental settings. Scholars in the field of institutional theory often argue that actors (e.g. new ventures) are embedded in wider institutional settings where specific conditions and constraints shape behaviour and activities of organisations (North, 1990). By adopting existing rules and procedures, ventures get rewarded and can thereby acquire necessary resources, customers, political power and legitimacy (DiMaggio and Powell, 1983). Moreover, DiMaggio and Powell (1983) argue that environmental factors such as uncertainty, ambiguous goals and poorly understood technologies are powerful forces encouraging mimetic processes among members of an organisational field. Although striving for similarity hence could be argued to be functional for firm survival and growth, it is often claimed that every new venture is unique and the facilitating factors that might lead to a successful business start-up vary (Deakins, 1999). Basic factors that might imply different start-up processes emanate from the nature or particular characteristics of the product/service (e.g. specific technologies or knowledge bases) that the firm seeks to commercialise, the specific markets that new ventures target, and the special resources and market entry strategies that are required for commercialisation. There accordingly seems to be good arguments both for the understanding that new ventures are formed by specific institutional setting in which they operate (which in turn encourages mimetic processes and similarity), and an understanding that instead underlines the uniqueness of organisational endeavours.

In focus of this article is the difference between academic spin-offs and non-academic new business start-ups. A main concern is how different product and market characteristics may be understood to relate to different market entry strategies and different modes of acquiring and organising the firm’s resources during the start-up process, as well as different consequences in terms of firm growth and revenues. We address this theme by comparing the start-up process of academic spin-offs (requiring specific and high-level knowledge) versus the process of starting a non-academic company (requiring a lower level of specialised expertise). Following Shane’s and Venkataraman’s (2000, p.218) definition, we by entrepreneurial endeavours mean “the processes by which opportunities to create future goods and services are discovered, evaluated, and exploited”. In other words, we focus on the development of a new venture where one or more founders formulate, commercialise, and further develop their business idea.

A THEORETICAL FRAMEWORK
Bygrave (1989) states that every firm’s start-up process is a disjointed, discontinuous and unique event and can, according to Lindholm Dahlstrand (2004), involve different intangible success factors. Therefore, there is no ready-made solution to the issue of “how to successfully start a new company”. Although, several researchers have tried to try to “map” the start-up process from different points of departure. New entrepreneurial events and processes may be studied
with a point of departure in the product/service that is offered to a market, or in the “the market-opportunity seeking behaviour” (Hendry et al., 1995) that opportunity recognition and exploitation involve. This classic “divide” has paved the way for two research streams in entrepreneurship research: (1) Research that, following Schumpeter (1934), has been interested in how new market offerings cause “creative destruction” by facilitating for innovators to gain competitive advantage on the market; (2) Research that, building on Kirzner (1973) and others, has been more interested in how entrepreneurs seize imbalances and opportunities on the market and exploit them for their own benefit. Even if most modern research in the field understands these two streams as “two sides of the same coin”; they involve fundamental differences. “Schumpeterian” entrepreneurship research may hence be understood to more highlight the role of “technology push”, e.g. new innovative products based on new knowledge or new combinations of knowledge, and the entrepreneurial role of destroying existing market structures by introducing more favourable solutions to customers’ problems, thereby creating “imbalances” in a previously stable but less dynamic economy. “Kirznerian” entrepreneurship research, on the other hand, underlines the function of the entrepreneur as someone who through market pull exploits an unfilled market need, and thereby creates a “balance” between demand and supply on the market. Although not transparent, the distinction between innovation and opportunity recognition relates to another dichotomised concept: the difference between proactive and reactive entrepreneurs (Crant, 1996). Recognising that in practice, innovation and opportunity recognition are often interwoven concepts, we still find the distinction between these two basic types of entrepreneurial endeavours as an initially interesting theoretical building block for this article.

The process of new venture creation
Regardless of origin, the process of creating a new venture could be viewed as a system of coexisting activities undertaken during different phases where one event could affect others resulting in complexity, disorder and even chaos some times. Aligning all the essential events in a start-up process is important for competitive success (Smith, 2007), and might look different depending on the new ventures origin or entrepreneurial endeavour. A typical and well-spread model depicting different phases in the start-up process was developed in 1999 by Deakins (and later utilized and further developed by Lindholm Dahlstrand, 2004). This model includes five different phases of the new venture creation process: idea formulation, opportunity recognition, pre-start planning and preparation for the venture start-up, venture establishment and launch, and, finally, post-entry development.

Previous research states that entrepreneurs discover opportunities related to their prior information and knowledge, such as education, work experience or other means (cf. Audretsch et al., 2004). Information and prior experience influence the entrepreneur’s ability to comprehend, interpret and apply new information in ways that those lacking that prior information cannot replicate (Roberts, 1991). Entrepreneurs will therefore normally start new firms in an attempt to exploit different ideas based on their previous knowledge and experience. Shane and Venkataraman (2000) state that the source of entrepreneurship lies in the difference in information about opportunities, and that individual differences influ-
ence how these individuals discover opportunities. This is in line with the Austrian framework argument that discoveries of entrepreneurial opportunities depend, to a certain extent, on the distribution of information in society, where the possession of distinctive information allows people to see different opportunities (Kirzner, 1973). Moreover, the discovery of entrepreneurial opportunities is an ability to identify commercial opportunities rather than an optimising process; therefore the entrepreneur needs to see new means-ends relationships in order to combine existing concepts and information into new ideas (Shane and Venkataraman, 2000). A key factor in the start-up process is to transform the developed idea into a business opportunity (Deakins 1999; Lindholm Dahlstrand, 2004) which often is affected by the individual’s inner drive. Shane et al. (2003) and Klovsten (2005) state that individual motivation, the inner drive, and personal engagement in the new venture need to be above the level of a hobby activity in order to succeed.

Next, in a pre-starting phase, the entrepreneur needs to investigate the opportunities for business financing and to do market research indicating market profitability, a task especially important for a technology-based venture (Deakins, 1999; Lindholm Dahlstrand, 2004). The selection of a market segment is particularly important to maintain the core focus of the product/service. In this stage the entrepreneur also has to prepare for the venture’s organisation, which, according to Storey (1994), can benefit from a team of founders instead of a single founder, due to the fact that several founders also may facilitate access to a broader range of networks and expertise. In team-based new ventures it is however important that the knowledge and experience of the team are complementary, and that their personal characteristics match one another (Lindholm Dahlstrand, 2004).

When a venture is about to enter a market, timing is essential to the venture’s success (Deakins, 1999; Lindholm Dahlstrand, 2004). This is particularly significant for a new venture that launches new products. With innovative advantages a venture can achieve high returns if they are fast and first on the market (Lee et al., 2001). Such first movers are those who first introduce new products or services, which brings “monopoly profits” until imitators or substitutes come out on the market (Grimm and Smith, 1997). A presumption for first mover advantages is of course that the market is mature enough and ready, or that the venture with limited efforts can influence it to accept and demand the new product. To launch a new product may also necessitate for new ventures to educate customers in how to make full use of their products, which is associated with higher costs (Lindholm Dahlstrand, 2004). Further, if the new product is introduced to an immature market, the pioneer customers’ demand needs to be strong enough for them to be willing to pay for the product (Lazonick, 2005), and there are always risks for followers as soon as the market matures (Porter, 1985). Thus, resources such as patent holdings, brand equity, and other potentially valuable resources (Mosakowski, 2002) as well as knowledge based on elaborate market research can be essential and protective for the idea (Lindholm Dahlstrand, 2004). On the other hand, several studies on e.g. product development have identified the risk associated with a “pioneering strategy”, implying that a reactive “follower strategy” is more beneficial for long-term firm growth and revenues (Bain 1956; Cooper and Kleinschmidt, 1993).
Opportunities are however not always, or even primarily, discovered and exploited by a stand-alone-company. Cooper (2002) states that the creation of new ventures is often based on network ties of either an individual or of entrepreneurial teams. With the intention of competing effectively on markets, small firms are increasingly using alliances and networks both to get access to information (e.g. market or technology information; cf. Ylinenpää, 1999), and to acquire and build necessary resources and capabilities (Hitt et al., 2002; Westerberg and Ylinenpää, 2006; Wincent and Westerberg, 2006). This allows firms to compete on markets without first possessing all the resources needed (Cooper, 2002), and enhances new ventures’ chance of survival and eventual success (Song et al., 2008; Baum et al., 2000). The most important task for a new venture is to build up its track record and liability in order to attract customers, obtain required financing, and to be able to get credit from suppliers (Cooper, 2002; Hitt et al., 2002). From this perspective, ventures started by younger entrepreneurs may face higher thresholds because of their lack of developed networks and track records (Deakins, 1999; Lindholm Dahlstrand, 2004). Developing and utilising networks can however create legitimacy for new firms (Lee et al., 2001). If the venture is focused on creating a new market or a niche within an established market, and building awareness among customers of its innovative product, alliances can lead to exchange relationships with entrepreneurial firms’ customers (Cooper, 2002; Klofsten, 2005). Strategic alliances as well as strategic networks have, according to Hitt et al. (2002) become highly popular means for e.g. entering international markets. Global new ventures need to establish network relations with e.g. partners and/or key customers helping them breaking into new markets (McDougall and Oviatt, 2000). In an international entry, Lu and Beamish (2001) found that small firms experience greater profits when they engage in alliances with local partners on the new markets. As a result, building different kinds of networks is important for firm survival and success during the start-up process.

**An emerging theoretical framework**

From the above literature review a theoretical framework serving as a guide for empirical analysis may be generated. The context of this framework is a time-based sequential model for “normal” or “ideal” new venture creation processes, developed on the basis of Deakins (1999) and Lindholm Dahlstrand (2004). The focus of the framework consists of key concepts that we have identified as important for developing a better understanding of our research purpose: to identify how different product and market characteristics may be understood to relate to different market entry strategies and different modes of acquiring and organising the firm’s resources during the start-up process, as well as different outcomes in terms of firm growth and profit. The basic idea of the framework is that the nature and level of a firm’s resources (i.e. its tangible as well as its intangible resources) can affect the idea formulation, the opportunity recognition, the planning and the factual start-up of a new venture, the market approach, and how the venture is developed during and after its launch. Likewise, the chosen entry strategy and the characteristics of both the venture’s products/services and markets affect decisions referring to the planning and implementation of the new business concept. At the same time, the start-up process with its activities and events (and not least, the learning that such experiences often involve)
should affect the emergent entry strategy, required resources or the final product development, since market research and different preparations may call for modifications and strategic shifts along the way. This is in Figure 1 illustrated by two-way arrows.

FIGURE 1
A Theoretical Framework Depicting a New Venture’s Start-Up Process

METHOD
In order to arrive at a proper understanding of the new venture creation process, we need a more holistic understanding of the phenomenon that takes an interest in both the process itself and in important factors related to the phenomenon under study (c.f. the approach taken by Bouchikhi, 1993). Case studies as a research strategy have a distinctive place in research aiming at such a holistic understanding of the phenomenon under study per se as well as at how different factors might relate to each other (Guba and Lincoln, 1989; Patton, 1990). First of all, case studies are essential when an investigator wants to describe a course of events in a real-life context. Secondly, case studies are important when the investigator tries to explain the presumed casual links in complex real-life (cf. Miles and Huberman, 1994; Yin, 2003). Since the intention of this study was to analyse and compare two types of start-up processes, namely the academic spin-off creation and the non-academic venture creation, and also to explain why the start-up processes evolved as they did, a case-study approach was chosen.

The criteria used for selecting case-study firms were that from the start they should have operated for at least three years; that the firms were either manufacturing or service companies; that the firms were developed in different environments (different situational and contextual settings) and finally, that the
growth rate varied. These criteria were chosen in order to get more thorough and varying information about different ventures’ start-up processes as well as different influencing factors with the intention to be able to identify patterns (Miles and Huberman, 1994) relevant for analytic generalization. Case studies were made in three academic spin-offs; X-Tech, Y-Tech and Z-Tech, and in three non-academic ventures; A-Trade, B-Trade and C-Trade. Some basic data on the case study firms is given in Table 1 below:

**TABLE 1:**
Basic Data on Case-Study Firms at the Time of Data Collection

<table>
<thead>
<tr>
<th>No. of employees</th>
<th>Business concept</th>
<th>Annual turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Tech 15</td>
<td>To offer people the opportunity to interact and cooperate through their computers where people are able to talk and see each other, chat, share documents, use a whiteboard and surf the web together, regardless of their geographical location.</td>
<td>1.06 MEUR</td>
</tr>
<tr>
<td>Y-Tech 4</td>
<td>To offer research- and EU-project participants the opportunity to cooperate using distance-spanning information technology, enabling them to work with and share documents, manage, control and plan the project through a custom-made project tool on the Internet.</td>
<td>0.42 MEUR</td>
</tr>
<tr>
<td>Z-Tech 0</td>
<td>To offer companies a 3-D motor, which they can integrate into their products (games), and to offer people opportunities to play virtually advanced games on the Internet.</td>
<td>0.21 MEUR</td>
</tr>
<tr>
<td>A-Trade 3</td>
<td>To offer software that increases computer performance, and complete computer sets and appurtenant services, foremost to computer enthusiasts but also to other interested customers, primarily on a national market.</td>
<td>1.44 MEUR</td>
</tr>
<tr>
<td>B-Trade 2</td>
<td>To offer kiosk products of good quality and with a high degree of service to a local market.</td>
<td>0.53 MEUR</td>
</tr>
<tr>
<td>C-Trade 0</td>
<td>To offer designed products with optimal design and function to private persons, organisations, wholesalers, etc.</td>
<td>0.01 MEUR</td>
</tr>
</tbody>
</table>

The empirical data was collected through personal and open-ended interviews with founders of the ventures where they described their start-up process and different factors and events that influenced this process. The personal interviews were semi-structured and the respondents were told to recall and describe how they had progressed through their professional lives from completion of their education until the time of the study, and to explain decisions during their careers and how these decisions affected their further careers. A major reason for using a semi-structured approach was to get more detailed information and to ensure that the discussion was driven by what the respondents felt was important in order to stay as close as possible to their lived experience. However, to avoid that due to forgetfulness, after-rationalization or other circumstances, the respondents left out important information referring to e.g., different phases of their development processes, also more specific questions were asked. In order to validate the information, every interview was concluded by constructing a “rich picture” (Miles and Huberman, 1994) where a time-line was drawn on a paper and different events and experiences that influenced the respondents’ decisions were noted. Each interview lasted about two to three hours. In addition, information was also obtained from the ventures’ websites, from a business database and by studying printed materials about the ventures.
FINDINGS
As could be expected, the start-up processes among academic spin-offs and non-academic ventures reveal both similarities and differences, but the focus in this article will be on the differences. In our summary of the new ventures’ start-up process key concepts/variables from our theoretical framework are specifically highlighted.

Academic spin-offs
Product characteristics: The original business concept in all spin-off companies originates directly or indirectly from academic research. This means that the products and services offered are knowledge-intensive and preferably high-tech. The founders of the academic spin-offs recognised an opportunity to create a product-based business based on their previous experiences and knowledge, and they developed a product for some years in parallel with their previous positions as researchers or students. Due to the significant time required for developing market-ready products, all three academic spin-offs started their businesses by also offering services such as consulting services as a complement to their product offers in order to generate a basic cash flow. These knowledge-based services, connected to the product, have been essential for the product users and enabled the companies to develop additional services generating important revenues. The products/services were moreover further developed in cooperation with the parent university, where the university served both as a pioneer user and a demanding customer.

Market characteristics and entry strategies: The aim of all spin-off ventures is to achieve world leadership in their specific niche - and to earn money. Recognising the limited size of the regional and national market, these new ventures chose to market their products on an international market from the very beginning. One of the ventures, Z-Tech, had to restructure their business idea and modify their product twice, since they learnt that they did not have the competitive advantage required to successfully compete against existing large international companies. The firms’ innovative products were offered to an often immature market and, as a consequence, these ventures had to educate their customers in how (and why) to use the product. X-Tech hired two retailers in the US who knew the market five years after their start-up and one in Europe a year later, in order to reach the customers and to offer them the product and service. Z-Tech had difficulties in reaching their target customers but got into contact with Sun Microsystems early in their start-up process and from them received assistance in their marketing, since Z-Tech had based their product on Sun Microsystems’s technology and refined the use of it (which Sun Microsystems had not been able to do themselves). Y-Tech, finally, has just recently started to look for a partner to cooperate with in sales in order to increase their markets.

Resource configuration: Their specialized and high-tech business concepts required significant investments in product development and refinement, normally spanning over several years. This has entailed a considerable need for (external) funding to finance staff/man-hours, product material and production equipment (e.g. computers, servers, software). Due to their limited creditability and track record, all spin-off firms have had to put a lot of effort into finding external
funding. This was especially evident in Z-Tech, whose founders were young students, whereas the founders of X-Tech and Y-Tech with their longer professional experiences had a higher credibility in attracting external venture capital. In order to acquire external funding, all academic spin-off companies early on founded a limited company. Moreover, all spin-off ventures were started by several (two to four) founders where different competences could be seen as complementary assets in the new ventures. Functions such as marketing, accounting, administration and responsibility for the firm’s retailers were hence shared among the founders. After the venture start-up, both X-Tech and Y-Tech have hired four to six new staff members for product development work. When these new ventures after some time also appointed a professional board of directors, they got access to a valuable function for management support – a mentoring support they would actually have needed already from the beginning but could not afford to pay for. Through their professional board of directors, the founders now got access to strategic guidance and business advice from experienced persons who knew the business and could broaden their networks and personal relations. Z-Tech has not yet been able to appoint a professional board of directors, but has meanwhile got in touch with people who are willing to give at least some advice.

**Growth and profit:** Due to their significant product development and personnel costs, it took several years before X-Tech and Y-Tech could report any net profits, and Z-Tech has not yet got the funding or reached the market shares and sales needed. During the post-entry development (here three to five years from start-up), X-Tech grew significantly from employing its four founders to 23 employees; a number that due to outsourcing of accounting, invoicing and marketing functions has today been reduced to 15. During this period of time the venture’s annual turnover increased from 530 to 640 thousand EUR, and increased further to nearly 1.1 million EUR in 2005. Y-Tech also increased their turnover to nearly half a million EUR in 2004 and employed four persons, whereas Z-Tech has no employees and has increased its turnover from 159 thousand EUR to 213 thousand EUR. It should be noted, however, that Z-Tech has not been in operation for more than three years, while the other firms in this group have run their businesses for seven and six years respectively.

**Non-academic ventures**

*Product characteristics:* The business concept in all companies originates from the founders’ recognition of a market opportunity signalling an unfilled market need. This need was exploited by offering the market already known products and by using the founders’ previous knowledge, experience or interest. Two of the ventures, A-Trade and B-Trade, sold products manufactured by suppliers. The third venture, C-Trade, designed its own products in order to improve or reform already known products, which were then in turn manufactured and sold by other companies that the founder had access to through her personal network that she built up over time, and through her relations with a community support program for new ventures.

*Market characteristics and entry strategies:* The ventures’ products were offered to a general and often local or national market providing sufficient revenues in line with the ambition of the founders to make a living. In one of the
firms (A-Trade), however, the initial business concept was developed and the ambitions expanded when they, through their customers and via different computer forums on the Internet, learned that there was a need for a specific new software product enabling the firm also to sell outside the national market through a web-based shop. Also C-Trade with the purpose of reaching a broader market started to cooperate with a retailer in the national capital a couple of years after its start-up.

Resource configuration: Contrary to the academic spin-off companies, the financial requirements for investments were limited. This enabled the non-academic firms to start their companies on the basis of their own personal savings and with general support given by government agencies to people starting a new company of their own. Moreover, all non-academic companies were started by single founders. The limited need for external funding and the fact that all companies started out as solo-entrepreneurs implied a simple structure where all companies started as (and still are) private firms and not limited companies. This also means that the firms have no management support in terms of a professional board of directors. All founders perceive themselves to be the most important resource for their new venture, but have to various degrees also acquired or accessed external resources and expertise to the firm. Only the founder of B-Trade had a high creditability and track record due to his prior occupation and enterprising within the line of business and therefore had no difficulties in getting external funding and trust from suppliers and banks. In addition, B-Trade’s founder had an established network that helped him with problem solving, which was something that C-Trade’s founder established during the start-up process. A-Trade and B-Trade hired external members of staff after their start-up to work with sales and other tasks, whereas C-Trade still operates alone.

Growth and profit: Based on the fact that all non-academic firms offered products well known to the market and that only limited initial investments were required, these ventures could attain a net profit from their first year of operation. While B-Trade and C-Trade have consolidated their companies on a level that provides revenues enough for a decent living, A-Trade stands out as an expansive exception: during the post-entry development (the three to five years from start-up) the annual turnover of A-Trade has increased from 0.27 MEUR to 1.4 MEUR as a consequence of the changed and developed business concept. Due to the increased sales, and because of the benefits a limited company may offer, the founder now considers reforming the venture into a joint-stock company. Although both B-Trade and C-Trade have also increased their turnover (B-Trade has increased its turnover by 20 % to 0.53 MEUR and C-Trade has doubled its turnover to 10.6 thousand EUR), they are in this specific respect not close to the level of A-Trade’s development.

ANALYSIS
Table 2 summarises the study’s findings, indicating that academic spin-offs and non-academic ventures have different start-up processes, characteristics and outcomes. The difference in product/service origin is in line with Schumpeter’s (1934) and Kirzner’s (1973) views on how entrepreneurs discover and exploit business opportunities, where the academic spin-offs enter a market through research based innovations that require change of customer behaviour (Walsh et
al., 2002), while the non-academic firms enter by satisfying existing market demands with, for example, replacements of or substitutes for existing products. While the academic spin-off may be understood to follow a market entry strategy characterised as “technology push” (implying e.g. higher investments, international markets already from the start, a need for education of customers and longer pay-off periods), the strategy of the non-academic firms in this study relies on “market pull” satisfying an existing market need with more or less well-known products and services. From this perspective the entrepreneurs with their roots in academic research manifest more of a proactive “Schumpeterian entrepreneurship” aiming for “exploration” (March 1991) of new business concepts, while the entrepreneurs starting non-academic firms reflect more of a reactive and “Kirznerian mode of entrepreneurship” seeking to “exploit” existing market opportunities (ibid.).

### TABLE 2:
The Start-Up Processes of Non-Academic Ventures and Academic Spin-Offs

<table>
<thead>
<tr>
<th>Start-up category</th>
<th>Academic Spin-Offs</th>
<th>Non-academic Ventures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• High-tech/knowledge-based</td>
<td>• Low-tech-based</td>
</tr>
<tr>
<td></td>
<td>• New to the market</td>
<td>• Known to the market</td>
</tr>
<tr>
<td></td>
<td>• Specific market niche requiring a broad market</td>
<td>• General market, often addressed with geographic specialisation</td>
</tr>
<tr>
<td></td>
<td>• International/global market</td>
<td>• Local/regional market</td>
</tr>
<tr>
<td><strong>Market characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Technology push</td>
<td>• Market pull</td>
</tr>
<tr>
<td></td>
<td>• Collaboration as a means of international market entry</td>
<td>• Normally relying on their own resources</td>
</tr>
<tr>
<td></td>
<td>• Proactive including education of new customers</td>
<td>• Reactive; “filling a hole on the market”</td>
</tr>
<tr>
<td><strong>Entry strategies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Substantial need for external funding</td>
<td>• No or limited need for external funding</td>
</tr>
<tr>
<td></td>
<td>More advanced structure:</td>
<td>Simple structure:</td>
</tr>
<tr>
<td></td>
<td>• several founders</td>
<td>• one owner-manager,</td>
</tr>
<tr>
<td></td>
<td>• a specialized management team and hired experts</td>
<td>• no professional board of directors,</td>
</tr>
<tr>
<td></td>
<td>• professional board of directors,</td>
<td>• private firm organisation</td>
</tr>
<tr>
<td></td>
<td>• limited company organisation,</td>
<td></td>
</tr>
<tr>
<td><strong>Resource configuration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Planned growth and long pay-off period, involving an increasing demand for financial and other resources</td>
<td>• Early growth stabilizing the firm as a “bread-and-butter-company” or emergent growth as a result of opportunity recognition</td>
</tr>
<tr>
<td></td>
<td>• No profit during the first years of operation</td>
<td>• Net profit from year one</td>
</tr>
<tr>
<td><strong>Growth and profit</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As the case of A-Trade demonstrates, however, the start-up process itself involves learning and opens new windows of opportunities, enabling firms to redefine their business concepts along the way, where mere opportunity exploitation based on offering customers already existing solutions to their needs is combined with at least some degree of innovative product development. However, when A-Trade after the start-up changed its business idea and offered “a product new to the market” to a specific market niche, this innovative product was initiated by the entrepreneur not based on “technology push” but on “market pull” – by recognising an opportunity on the market that current products did not satisfy. This indicates the importance of being sensitive to market signals where a change during one phase of the start-up is affecting the rest of the company’s development. A new venture, similar to existing businesses, has to adapt quickly to unpredicted situations to achieve success (Smith, 2007).

Whether the new venture has its origin in “technology push” or “market pull” also has implications for how the new venture configures its resources. Knowledge-intensive and high-tech companies generally require more resources for product development and international marketing, implying a need for external funding, long-term investments and a more advanced structure of the firm itself. Non-academic firms, normally targeting a regional or local “market hole” with products/services already known to the customer, may rely on their own resources, a shorter time to market and pay-off, and a more simple firm structure. These differences was manifested in this study by all academic spin-offs choosing to start a limited company with a management team and at least an ambition to appoint a professional board of directors in order to achieve the funding required and to access important knowledge resources. The non-academic firms, in contrast, relied on the owner-manager him/herself and a more simple firm structure. As pointed out by Storey (1994), access to different types of knowledge and expertise is important during the start-up process. If the new venture develops and exploits new and knowledge-based products/services, the importance of building a management/expert team with complementary knowledge in different functions and roles is even more highlighted (cf. Klofsten 2005; Lindholm Dahlstrand 2004), since one person alone seldom possesses all the competences required. Organising a professional board of directors is from this perspective a gateway to a broader range of expertise that a new venture may access; in the present study this strategy was employed only by the more knowledge-based firms represented by academic spin-offs.

To build networks and alliances may be regarded as a means of extending the boundaries of the firm itself, thereby making external resources accessible to the firm. In this study, alliance building was an essential ingredient in the spin-off firms’ strategy for entering their international target markets (cf. Hitt et al., 2002). X-Tech thus engaged retailers with knowledge of the specific demands of their target market, while Y-Tech was looking for collaboration with a sales company to help them reach a larger market. Z-Tech early on initiated cooperation with a large corporation in order to attract attention from their desired customer segment and to be able to demonstrate the benefits of their products. Such activities were considerably uncommon among the non-academic firms since
they targeted a local or regional market and relied more on their own in-house resources. According to Colombo et al. (2006), these findings show that new technology-based start-ups have greater inducement to collaborate with other actors in order to obtain specialised complementary assets.

The growth of a firm may be regarded as both an input and an output of a start-up process: input in terms of what motives and ambitions the founding entrepreneurs have for starting the new company, output in terms of the factual growth of the new venture. From the literature in the field (e.g. Davidsson 1989; Westerberg 1998) we know that the entrepreneurs’ own motives and ambitions are crucial as input-factors for whether the new venture will grow or not. In this study, all academic spin-offs aimed already from start at world leadership in their specific niche – and at earning money. The non-academic firms, on the other hand, were started as means of generating an income sufficient enough for the founder him/herself. When studying the firms’ growth processes, it was also obvious that the academic spin-offs followed a more growth-oriented and planned trajectory, whereas the non-academic ventures seemed to be satisfied with stabilising as a so called “bread-and-butter-company”. One exception, as already noted, is A-Trade, which experienced a high growth rate since the venture developed its business idea into a more growth-oriented trajectory. According to Mintzberg and Waters (1985), this growth-oriented trajectory may be understood as “an emergent strategy” based on the learning the entrepreneur experienced during her/his start-up, where the process (depicted as five phases in Figure 1) per se fertilised a reorientation of the firm’s business concept (the circles in Figure 1).

Despite the fact that the academic spin-offs in this study all clearly expressed high ambitions, it is only the non-academic firms that so far can report net profits. The academic spin-offs’ innovative products, require significantly higher investments than market offers from non-academic firms (cf. Lindholm Dahlstrand, 2004). As a consequence, academic spin-offs’ normally invite external funding into a joint-stock company (which non-academic firms often avoid), and often reach profitability later than non-academic firms. In the search for “first mover advantage” (Grimm and Smith, 1997; Lee et al., 2001), timing is however essential. For new innovative products to succeed on the market, the market should “be ready” or at least be possible to influence with limited efforts, like education, in order to build market demand. According to Shane (2001), innovations and a first-mover-strategy can be an advantage for a venture, while others (e.g. Cooper and Kleinschmidt, 1993) have pointed out that inappropriate timing may act as a barrier to the market as well. Whether the investments made in the academic spin-off companies in this study will pay off and be more profitable on a long-term basis than in the non-academic firms is however an issue for further study.

CONCLUSIONS

The main ambition of this article has been to analyse and compare the start-up processes of two different categories of start-ups, namely academic spin-offs requiring specific and high-level knowledge versus the process of starting “normal”, and non-academic new companies requiring lower level of specialized expertise. A main question we have tried to answer is how different institu-
tional constraints may be understood to relate to different market entry strategies and different modes of acquiring and organising the firm’s resources during the start-up process, as well as to different consequences in terms of firm growth and revenues.

Adopting a resource-based view of new venture creation and further development highlights that a new venture’s performance to a great extent may be attributed to the resources they hold (Penrose, 1959), where valuable, rare and inimitable resources could yield competitive advantage and a superior venture performance (c.f. Barney, 1991; Ylinenpää, 1999; Yli-Renko et al., 2001). In this perspective, the academic spin-offs’ business concepts, being derived from university research and/or education, had a more significant need for specific resources and expertise, an “explorative challenge” far more complicated and demanding than for non-academic ventures exploiting a product known to the market.

Alliance building was an essential ingredient in the academic spin-offs’ product development and strategy for entering international markets (cf. Hitt et al., 2002). Moreover, by organising a professional board of directors early on, the academic spin-offs got access to important expertise and their personal networks. Thus, by using alliances and networks, the academic spin-offs got access to the necessary resources and capabilities in order to compete effectively on their markets without first owning all the resources needed (cf. Cooper, 2002; Wincent and Westerberg, 2006; Colombo et al., 2006), and hence they were able to survive and grow despite their own lack of significant firm-specific resources. To build networks and alliances may accordingly be regarded as a means of extending the boundaries of the ventures themselves where such activities were considerably lower among the non-academic firms targeting a local or regional market and relying more on their own in-house resources.

To conclude, the start-up process and further development of new ventures may be understood as a system of elements affecting entrepreneurial strategic decision-making (Smith, 2007). The academic spin-offs’ start-up processes from this perspective significantly differ from the foundation of more “normal” business ventures. In fact, the results from this study yield an understanding of the start-up process as being centred on the entrepreneur and his/her organisation in non-academic firms, while the start-up process for academic spin-offs to a significantly higher degree involves manoeuvring and acting in a wider context together with other significant actors. While starting a traditional small firm highlights the key role of the single entrepreneur, academic venturing normally accentuates the need for team-work and partnering where the focal firm interacts with other players in order to build competitive advantage on an international and often immature market where customers are often not aware of their need for the specific products that are being offered. This inter-organisational process of academic spin-offs involves the challenge of mobilizing both traded and untraded resources “beyond the limits set by the resources they currently control” (Jarillo, 1989, p. 135). In this respect, new business venturing with its roots in academia may be better understood as collective entrepreneurship (Johannisson, 2003) where the new firm serves as “a nexus for traded and untraded interdependences” (Storper, 1995, p. 125), than a mere intra-organisational en-
endeavour involving primarily the entrepreneur and his/her organisation. From an institutional theory point of view, these entrepreneurial endeavours may moreover be understood as “institutional entrepreneurship” (Zimmerman and Zeitz, 2002), where firms develop something new in a specific institutional setting and act as pioneers establishing legitimacy for followers. New ventures in new industries hence often uncover new domains of operations that lack existing scripts, rules, norms, values and models (ibid.); thereby also contributing to forming new institutional norms and rules of behaviour. While this in this specific study is illustrated by academic spin-offs, non-academic start-ups due to their more reactive strategy are more inclined to follow existing rules, norms and models which results in more homogenous firms.

**IMPLICATIONS**

The findings presented in Table 2 depict two very different start-up processes, and may serve as a basis for drawing interesting implications for practice, policy-makers and academic research. For entrepreneurs interested in starting a new venture, this article highlights challenges to be solved during the start-up process and how these relate to the nature of the business concept (especially the degree of knowledge invested in the venture’s products and services). In comparison to non-academic start-up ventures, knowledge-based ventures face a more complex start-up process, which requires specific, complementary and extended resources in the form of funding, skills and knowledge to manage. These resources can be obtained through networks and alliances with other companies, and through key individuals such as members of the firm’s board of directors. To conclude, starting a knowledge-based academic spin-off company requires a different set of management strategies and practices compared to starting a more traditional small business.

For policy-makers and organisations active in supporting new venture creation, this article has hopefully manifested the dangers of generalizing business start-up as a uniform process. In fact, entrepreneurs and business concepts are different (Bygrave 1989) and benefit from different kinds and degrees of assistance during their start-up processes. For academic spin-offs, access to long-term external venture capital is critical, while non-academic start-ups may to a higher degree rely on internal funding. Academic spin-offs are also to a greater extent dependent on firm-specific resources (e.g. specialized mentoring support) in contrast to non-academic ventures, which may manage their start-up processes themselves or in combination with general new venture creation support. Consequently, policy-makers and support organisations should consider such different needs when e.g. designing incubators and other support systems for new venture creation.

For the academic community, this article may have contributed more in-depth knowledge of factors and processes involved when comparing knowledge-intensive new ventures with more “normal” business start-ups. One interesting result emerging from this study is the contrast between non-academic solo entrepreneurs, to a very high degree relying on the resources and skills of one single person (The Entrepreneur), versus the more or less “collective mode of entrepreneurship”, involving both internal and external partners, that characterises academic spin-off start-up processes. Future research should benefit from elabo-
rating on this theme utilizing qualitative, in-depth approaches as well as quantitative approaches and a more robust database. Adopting a learning perspective, it would also be interesting to study more thoroughly the “experiential learning” taking place during the process of discovering, planning and exploiting a business opportunity – in this study most significantly demonstrated by the case of A-Trade. Related to this is the function of previous learning and experiences: Do “habitual entrepreneurs” behave differently than “novice entrepreneurs”? Following the holistic approach taken in this article, it should also be important to develop a more holistic understanding of the new venture creation process, involving e.g. entrepreneurial motivation and individual capabilities as factors taken more into consideration.

REFERENCES:


Paper 2:

The relation between network competence, network structure, strategy and new venture performance

Sari Roininen and Mats Westerberg

Published in
Haapasalo, H and Iskanius, P (eds., 2006),
The 1st Nordic innovation research conference — Finnkampen.
(Acta: University of Oulu).
The relation between network competence, network structure, strategy and new venture performance

Sari Roininen* and Mats Westerberg
Entrepreneurship, Department of Business Administration and Social Science, Luleå University of Technology, 97187 Luleå, Sweden, E-mail: *Sari.Roininen@ltu.se

Abstract

This paper develops a model to explain new venture performance using network theory. The model suggests that a new venture’s performance – both directly and indirectly through strategy – can be explained by its network competence and network structure. Further, venture complexity is hypothesized to moderate the relationship where those ventures having higher task complexity will benefit more from their network competence and structure. In the paper, we also briefly outline how this model can be put to test.

Keywords: network competence, network structure, new venture performance.
1 Introduction

New ventures, as well as existing small and medium sized companies, are commonly seen as sources of regional and national growth which also has increased the interest of new and small firms among policy makers and researchers. According to Roininen (2006) new ventures can be developed and created in different environments, such as within university and other less highly educational environments. Accordingly, these environments produce different types of new ventures, namely academic spin-offs and non-academic ventures, which also might result in different levels of economic growth. In addition, depending on the origin of the new venture they might also have different market-opportunity seeking behaviour resulting in different market offerings and strategies, which thereby affects long and short term returns (ibid.). One can see two main opposite strategies, namely a “technology push” strategy (e.g. new innovative products based on new knowledge or new combinations of knowledge) destroying existing market structures by the introduction of more favourable solutions to customers’ problems (see Schumpeter, 1934) and a “market pull” strategy which underlines exploitation of an unfilled market need (see Kirzner, 1973). These different strategies can affect the new ventures’ competitive performances where important distinction can be made between new ventures stemming from academia, that are assumed to be more Schumpeterian and thereby more competitive, and those from less educational environment that are assumed to be more Kirznerian and less competitive (Roininen, 2006).

However, opportunities are not always (or even primarily) discovered and exploited by a stand-alone-company. With the intention of competing effectively on markets, prior research state that firms are increasingly using alliances and networks both to get access to information (e.g. market or technology information; cf. Ylinenpää, 1999), and to acquire and build necessary resources and capabilities (Johansson, 2006; Wincent & Westerberg, 2006; Hitt et al., 2002). This cooperation allows firms to compete on markets without first possessing all the resources needed (Cooper, 2002), and enhances new ventures’ chance of survival and eventual success (Baum et al., 2000).

Research that specifically focuses on early phases in a venture’s existence could increase the knowledge of and understanding in how early venture strategies (for instance in terms of how entrepreneurial the venture behaves and whether it is using pull or push) are related to venture performance. In addition, there are few empirical studies that identify organizational attributes that promote growth and long-term survival of academic spin-offs (Walter et al., 2006), and there are even less research that focus on whether academic spin-offs and non-academic ventures use networking differently to achieve competitive performance. Thus, our interest lies in the comparison of these two different types of new ventures and to examine if there exist differences in how new ventures in different situations achieve advantages on their markets. For instance, are academic spin-offs more dependent on cooperation than non-academic ventures in order to effectively carry out their strategy and thereby attain a more competitive performance? If new ventures make use of networks and alliances, how and to what degree do they use these networks, and how do the partners influence the strategy of the firm? Answering these kinds of questions might highlight possibilities and hindrances for new ventures to effectively operate and obtain competitive advantages.
This paper elaborates on how different types of ventures (i.e. academic spin-offs and non-academic ventures) achieve competitive performance, and thereby regional or national growth, by mainly using network and firm strategy theories. In the next section we will describe a conceptual model of a new venture’s performance and how the performance (directly and indirectly) can be affected by a set of components. Thereafter we suggest how the model could be put to test, and finally we end up with a discussion with some conclusions of the paper’s contribution.

2. A conceptual model

In this section we are discussing a conceptual model that can explain new venture performance by using network theory. The aim is to define variables affecting new venture performance. Much of prior research has focused on network relations and thereby the ventures competitive advantages indicating that there is a strong relationship between networks and the access to missing venture competences leading to competitive advantages. According to Walter et al. (2006), network competences and entrepreneurial orientation are two important factors that affect organizational performance. Similarly, Nicolaou and Birley (2003) discuss that social relational ties or structural holes are important in the development of a new venture.

Figure 1 shows the conceptual model where it is assumed that both the new venture’s network structure and its network competence affect the venture’s strategy. Together the network structure, the strategy and the network competence affect the competitive performance of the new venture. However, the new venture’s strategy could also affect the network structure depending on the origin of the venture, the venture’s offerings and targeted customer segments. A moderating variable that influence the outcome of a new venture’s network structure, strategy and network competence is the venture complexity, i.e. to what extent tasks in the venture is recurring and analyzable. Depending on the degree of innovation and level of technology in the new venture, the impact on competitive performance from network structure, network competence and strategy can be different.
2.1. The desired outcome for a new venture – competitive performance

Competitive performance is a rather difficult concept when it comes to new ventures. If the venture is established on a mature market, traditional aspects of firm performance (such as profitability and growth in sales) may tell a lot about the well-being of the venture. Similar measurements of venture performance were also used in the study of university spin-offs by Walter et al. (2006). However, if the venture is entering (or even is trying to create) a novel market, traditional aspects do not provide adequate information. Then, prospects about the future, legitimacy with partners and success with financing may be better proxies for competitiveness. Walter et al. had this problem and added four perceptual subjective measures, namely; profit attainment, perceived customer relationship quality, realised competitive advantages and securing long-term survival. Clearly, it is not straight-forward to conceptualize competitiveness and several aspects need to be taken into account.
2.2. The suggested determinants behind competitiveness

2.2.1 Strategy – introduction

Prior research by e.g. Hitt et al. (2001); Hamel (2000); Zahra et al. (1995); Drucker (1985) and Schumpeter (1934) suggest that innovation is the prime activity of entrepreneurship, and that the invention of new products and/or services and then commercialising them is an important value-creating action. Thus, to compete effectively on local and global markets innovations are critical, as well as attaining difficulties for competitors to imitate them. Moreover, to achieve long-term competitive advantages Zahra et al. (1995) and Lee et al. (2001) point out that a venture can achieve high returns if they are first on the market, and thereby first to introduce new products or services, which brings “monopoly profits” (Grimm & Smith, 1997) until imitators or substitutes come out on the market. This is a competitive advantage that occurs when the venture has the opportunity to capture large market segments and charge high prices, which has, for example, occurred in biotechnology and telecommunication industries (Zahra et al., 1995).

On the other hand, there are risks for followers as soon as the market matures (Porter, 1985). Information diffuses to others in society who can imitate the innovator and tap into some of the entrepreneurial profits (Shane & Venkataraman, 2000). Thus, monopoly rights, slowness of information diffusion, and inability of others to imitate, substitute or acquire rare resources increase the duration of innovations. Moreover, commercializing innovations requires the involvement and collaboration of e.g. marketing, production, R&D and other units, which is expensive (Zahra et al., 1995). Accordingly, several studies of e.g. product development have identified the risk associated with a “pioneering strategy”, implying that a more reactive “follower strategy” is more beneficial for long-term firm growth and revenues (Bodin, 2000; Cooper & Kleinschmidt, 1993; Bain 1956).

A generally known marketing approach is to build competitiveness through recognition of potential demands. Walsh et al. (2002) define this strategy as market-pull strategy where the venture provides replacements or substitutes for existing products that are quickly adopted by existing customers. In contrast, technology-push strategies involve innovations that require customers to change their behaviour in order to make use of the innovation, which often only a few early adopters might call for, and therefore new innovations face specific constraints and challenges. Consequently, a technology-push strategy normally implies e.g. higher investments, international markets already from the start, and a need for education of customers and longer pay-off periods, whereas a market-pull strategy relies more on satisfying an existing market need with more or less well-known products and services. Schumpeter (1934) and Kirzner (1973) have in the same way identified different views on how entrepreneurs discover and exploit business opportunities, where Schumpeter advocates a technology push strategy and Kirzner a market pull strategy. These strategies are however affected by e.g. the ventures proactiveness and search for new opportunities, which will be discussed in more detail below.
2.2.2 Strategy – Entrepreneurial orientation

When new ventures are about to get established on a market they need, similar to existing companies, to involve in strategic thinking in order to create value (Hitt et al., 2002, Roberts, 1991). According to Bowman and Faulkner (1996), strategic thinking concerns decisions about how to achieve competitive advantages through choices. New business opportunities, or new entry as Lumpkin and Dess (1996) defines it, can be accomplished by entering new or existing markets with new or existing products or services, and it involves also the opportunity to create new markets. Therefore new ventures have to involve in opportunity-seeking actions that arise from uncertainty as well as advantage-seeking actions, which Lumpkin and Dess (1996) refers to as entrepreneurial orientation (EO). A venture’s EO can be described as a process consisting of five different dimensions, which is, a venture’s organisational autonomy, willingness to take risks, innovativeness, proactiveness and competitive aggressiveness (Walter et al., 2003, Lumpkin & Dess, 1996). Moreover, these dimensions may independently vary affecting a venture’s performance but they are dependent of the venture’s internal and external context.

To describe the effect of EO on venture performance, Lumpkin and Dess (1996) propose that an important drive for new-entry activities is the ability and willingness of an individual or a team to be autonomous in the search of opportunities. Likewise, a ventures innovativeness (i.e. technological or product-market innovations) reflects important means to track new opportunities since innovativeness is seen as pushing the dynamic evolution of the economy (Schumpeter, 1934) and thus the venture being highly competitive. In the literature, entrepreneurship is also typified by risk taking and proactive behaviour. By this, Lumpkin and Dess mean that entrepreneurially oriented ventures employ risk-taking behaviour incurring heavy debt, making large resource commitments and/or investing in unexplored technologies when seizing opportunities. Similarly, a venture’s proactive behaviour by anticipating and acting on future needs in the search for opportunities is equally important. Finally, crucial for a venture’s success and survival is its way to aggressively outperform the competitors on the marketplace by, for example, adopting unconventional tactics or targeting competitors’ weaknesses.

Conceptualising entrepreneurship, or entrepreneurial orientation, is not as simple as it may seem. Lumpkin and Dess stresses that the five dimensions of EO (described above) may occur in different combinations depending on the opportunity that a venture pursues and not even all of them have to appear in a venture in order for it to be entrepreneurial. In addition, contingency variables such as firm structure, strategy, strategy-making process, firm resources, culture and firm management together with environmental and industrial variables may also affect the link between EO and venture performance (ibid.).
2.2.3 Networks – introduction

Lu and Beamish (2001) found that small firms (which new ventures often are in the beginning) experience greater profits when they engage in alliances with local partners on new markets. Moreover, networks can create legitimacy for new firms, especially if they are focused on creating a new market or a niche within an established market, since alliances can lead to exchange relationships with entrepreneurial firms’ customers (Cooper, 2002). In addition, Cooper states that ideas for new ventures often lead to the formation of social networks, and that the creation of new ventures is based on network ties of either an individual or of entrepreneurial teams. Thus, networks are sources of as well as means for exploiting entrepreneurial opportunities.

2.2.4 Network competence

The interest in capabilities that enable new ventures to succeed has increased. Ventures are widely recognized as being embedded in social and professional networks with others and are therefore no longer considered as individual and self-fulfilling units (Walter et al., 2003). Instead the authors point at the ventures’ learning aspects of critical capabilities and protection of firm-specific competencies as a development of friendship, respect and trust between interacting parties. Similarly to Walter et al. (2003, p.547) we define network competence as the new venture’s ability to develop and use inter-firm relationships which includes the following components: a) the ventures coordination activities between collaborating firms, b) the venture founders’ relational skills due to their ability of inter-personal exchange, c) partner knowledge, i.e. possessing organised and structured information about their collaborating firms and competitors, and, d) the venture’s internal communication to attain organisational learning within partnerships. The result of network competence, as we see it, is that ventures have to manage relationships that goes beyond coping with single relationships, and therefore ventures no longer can be viewed as individual, self-fulfilling units but rather as “organizing” ventures that interact with other actors in order to be able to carry out a strategy and build competitive advantage. This allows the collaborating partners to focus on their core activities and to interlink these with each other’s competencies.

Highly innovative or high technology firms, such as academic spin-offs, often have to target an immature and international market in order to commercialise their products/services (Roininen, 2006). Walter et al. (2006) found similar results in their study of university spin-offs where they argue that technology-push strategies with collaborative partners may hasten adoption. As a result, new ventures need reliable market partners to get access to initial customers that often need education to be able to use the innovative product. Together with these partners, a new venture can increase its credibility and get access to the targeted market.

What prior studies like the one by Walter et al. (2006) lacks is the dynamic aspect of network capability, that is, capabilities in locating and building up new relations rather than merely sustaining old ones. For example, the new ventures in Roininen’s (2006) study that were started by young people, had a rather poor network at the start, but by working systematically to build a functional network of competences and partners, they could change the situation. Therefore, an aspect that catches the dynamic capability in network development is essential to add into the ability of network competence.
2.2.5 Network structure

A network structure often consists of multiple actors where a certain actor is connected to certain other actors. According to Burt (1992), these actors share trust, are obligated to support each other, and are dependent of exchange with each other. The competitive advantage in a network structure is thus how it is constructed and the position of the actor’s contacts in the social construction. Here the amount of interaction between the contacts resources and the venture’s own resources, as well as the variation in this interaction, is of importance. The importance of network structure for entrepreneurial competitive advantages has attracted attention basically from two streams of research. One stream, based on research by Granovetter (1985), argues that the social structure is an interconnected embedded network consisting of either weak or strong ties, where weak ties, among other things, are means to make the venture competitive. The other stream, based on research by Burt, says that it is a matter of optimising structural wholes where the holes are keys to information benefits and thus more favourable of obtaining competitive advantages.

According to Burt (1992) networks has to design principles referring to their efficiency as well as their effectiveness. The first principle establishes the number of nonredundant contacts in the network, that is, to maximize connections with different people beyond the network that gives higher benefits because of more and preferably diverse contacts are included in the network. As a result more diverse sources of information, resources and competences necessary for the venture to be efficient are ensured. The second principle points out connections as ports of access to more diverse and separate clusters of people that are beneficial for a venture. Here the actor (or the venture) maintains the primary contacts who in turn reach other people (secondary contacts) in other clusters so that an extension to include new clusters of the venture’s own network can be made. The venture is then free to focus on primary contacts and thus has more time for effectiveness, that is to do the right things. As Burt (p. 69-70) puts it “the information screen provided by multiple clusters of contacts is broader, providing better assurance of the players being informed of opportunities and impending disasters”. By this the central actor becomes the one who brings people together and obtains the opportunity to coordinate the activities among the collaborating firms, which is an important network competence.

Granovetter (1985) argues that institutions (or organisations) can be analysed by their ongoing social relations where the networks can be argued to be of significant importance in accessing information. Where Burt (1992) talks of the importance of structural holes, Granovetter (1973) talks about the strength of weak ties; meaning that bridges to knowledge, information and resources that are crucial to individuals’ (or in this case the ventures’) opportunities and to their integration into societies consists of loose interpersonal ties. Additionally, strength of a tie is defined as a combination of the amount of time, emotional intensity, intimacy and mutual services between the parts in a network. Consequently, a network consisting of weak ties has bridges to clusters of information, whereas the connections within a cluster merely consist of strong ties. The bridges that provide information benefits, namely connections with nonredundant ties beyond a cluster are (as Burt argue), more likely to be weak than strong. This means that
information, knowledge and resources obtained through weak ties can reach a large number of people over great social distance (Granovetter, 1973).

To summarize, a new venture’s network structure consists of the entrepreneur/s themselves as well as the number of other interested parties. This in turn has the result that the strength of network relations is dependent of the variety of participative people and their relations to others. As a consequence, these relations and the access to required resources or competencies affect the new venture’s strategy. At the same time a new venture’s strategy is also affected by the network competences in the firm, that is, the firm’s ability of coordination between collaborating firms, the relational skills among the entrepreneurs, the knowledge of partners and competitors, the internal communication of the venture and the dynamic of the ventures network competences.

2.3. Venture complexity

2.3.1 Academic spin-offs vs. non-academic ventures

The type of new venture might affect the venture’s competitive performance, that is, the attained competitive advantages over existing companies and the new venture’s further growth and survival. According to Nicolaou and Birley (2003) an academic spin-off involves the transfer of a core technology from an academic institution into a new company, but we also include other knowledge intensive outcomes from university education in the definition. Moreover, in our definition the academic spin-offs are founded by students, researchers or other employees of the academia and thereby exclude those who do not commercialize intellectual properties created in academic institutions. Thus, our definition is in line with Shane’s (2004, p.4) definition of an academic spin-off as “a new company founded to exploit a piece of intellectual property created in an academic institution”. A non-academic venture on the other hand is in this paper defined as a venture that does not have its origin in academic or other research projects, and that is created by founders with a lower educational degree than the founders of academic spin-offs. As a result, the complexity or origin of these two types of new ventures is expected to affect the venture’s competitive performance and further growth.

2.3.2 Task complexity

A venture’s earned profits could largely be attributed to the resources they hold (Penrose, 1959), and ventures with valuable, rare and inimitable resources have the potential to achieve superior competitive performance (Barney, 1991). These resources could consist of internal capabilities such as EO, technological capabilities, and financial resources (Lee et al., 2001; Baum et al., 2000). Another critical asset, as well as a competitive advantage, is knowledge (Grant, 1996; Ylinenpää, 1999). Important competitive resources of a firm resides in its human capital (Hitt et al., 2001), and young (or new) technology-based ventures lacking these resources can achieve competitive advantages through getting hold of important difficult-to-imitate capabilities embedded in inter-organizational relationships with external organizations, customers, suppliers, investors, government institutions, and the like (Yli-Renko et al., 2001). Through this knowledge
acquisition, new ventures are able to survive and grow despite the lack of significant firm-specific resources.

Consequently, strategic options such as “technology push” or “market pull” has implications for how the new venture configures its resources in order to enter its target markets. According to Roininen (2006) knowledge-intensive and often high-tech companies generally require more resources for product development and (international) marketing, implying a need for external funding, long-term investments and a more advanced structure of the firm itself. Likewise, commercialization of high-technology product/service required high investments especially when the new venture targeted an international and immature market since this market approach often calls for customer education and specific marketing methods that are expensive and time demanding. Moreover, Roininen argues that development and commercialization following a “technology-push” entry strategy also requires a combination of different kinds of expertise during the start-up process for product development, commercialization and strategic planning; a situation far more complicated and demanding than for the non-academic ventures commercializing a product known to the market. In this perspective, the academic spin-offs’ business concepts, being derived from university research and/or education, should have a more significant need for resources than the non-academic ventures and thus a higher need of networks and alliances to accomplish the entry on a market.

Again, in relation to figure 1 the outcome of the affecting variables (i.e. network structure, entry strategy and network competences) on new ventures’ competitive performance is dependent of the new venture’s complexity suggesting that the degree of complexity in a venture affects how the affecting variables influence the new venture’s performance.

3. Summary and propositions

From prior research e.g. Roininen (2006) and Walter et al. (2006) the findings show that new academic spin-offs and non-academic ventures might achieve competitive performance through networks and alliances. The competitive advantages could be a result of the new ventures possibilities to get access to information, resources and knowledge that is missing in the company in order to get hold of important difficult-to-imitate capabilities embedded in the inter-organizational relationships (cf. Hitt et al., 2001; Yli-Renko et al., 1999; Ylinenpää, 1999; Grant, 1996). However, to be able to join a network the venture is dependent of competences in networking, i.e. abilities in developing and making use of inter-firm relationships (Walter et al., 2006). This network competence in turn affects the structure of the network, that is, the mixture of partners and people possessing the essential capabilities. A network gains from being constructed with connections to people within other clusters beyond the network in order to obtain more diverse information, resources or competences (Burt, 1992). In addition, Granovetter (1973) states that the most beneficial network connections often are social relations consisting of weak ties with low effort spent on the relationship, giving the company more time to focus on their core activity. Therefore, both the network
competence and the network structure affect the new venture’s strategy in outperforming the existing companies.

The suggestion in this paper is that the venture’s competitive performance is not only dependent of the venture’s network structure, network competence and its strategy but also by the complexity of the venture. In other words, the venture’s complexity affects the venture's network competence and how the venture builds up its network structure. If a venture is highly complex, like academic spin-offs that often are innovative, have less routinized activities and are more difficult to analyse, it probably requires more capabilities in form of expertise competences, external funding and cooperation with partners to get out on the market, which also most likely leads to higher requirement of networks. In addition, the complexity of a new venture also affects the chosen strategy to achieve competitive performance and to reach out to customers.

If we go back to the model proposed in Figure 1, we propose the following relations. Regarding the impact from network competence, we propose that the more competence a venture have in building and maintaining a network; 1) the more and stronger network contacts it will have; 2) the more entrepreneurial orientation it will show and 3) the better competitive performance it will have. For 1) it is easy to argue that better network competence leads to a more advanced network structure in terms of size and strength. Network competence is the tool to build a network and network structure can be seen as a result. For 2) we find network competence to be a good starting point for entrepreneurial behaviour in terms of innovation, proactiveness and risk taking. By having the tools to network, the venture also have the tools to show entrepreneurial orientation. Finally, for 3) we argue that network competence by itself can provide better performance, especially in terms of creating legitimacy. When being seen as a competent networker, stake-holders around the venture will be drawn to the venture, and thereby improve the competitive situation.

For network structure, we propose that the more extensive the network is, 1) the higher the entrepreneurial orientation will be and 2) the better the competitive performance of the venture. For 1) we argue that each network contact is a source for entrepreneurial activity and the more contacts, the more opportunities for entrepreneurship and thus EO. The link in 2) can be explained by the same logic as 3) above, that is, when a venture has a more extensive network, it has an easier task when seeking legitimacy for its actions. The link from EO to competitive performance is also proposed to be positive in line with evidence found in earlier studies (e.g. Wiklund, 1998).

Finally, the moderating variable is proposed to work as follows. The higher the venture complexity the stronger the relationship to competitive performance from 1) network competence and 2) network structure. For 3) EO we propose the opposite relation, that is, the higher the venture complexity, the weaker the relationship between EO and competitive performance. The logic is similar to the first two links and is based on that network competence and network structure pays off better on performance if the venture is complex rather than simple. Having and being able to build a network may always be helpful, but perhaps not so much so when the venture is too simple in terms of complexity and therefore extensive networking does not add any value to the firm’s operations. The opposite logic is true for EO. Entrepreneurial activities may be more certain to lead to performance when the venture is relatively simple. When complexity is too high, EO may be more difficult to put into useful action.
4. Putting the model to test

There is a range of different issues to consider conducting a comparative study. For instance, the context of the new ventures has to be decided upon. Is it going to be studies of a specific type of ventures, like ICT-related (i.e. information and communication technology) companies, or could it include all types of ventures? Other considerations are the location and age of the ventures. These are examples of questions that have to be well thought-out in order to get access to adequate empirical data. As important as it is to find the “right” sources of information is the method of the study. Both qualitative and quantitative methodologies could be chosen to get accurate results. A quantitative study can be used by testing hypotheses on a large sample of new ventures, and thereby obtain findings that could be generalized to a broader population, whereas a qualitative study can be used as a source of richer descriptions and explanations to obtain a deeper understanding of the phenomenon, including influencing conditions and prerequisites (Denzin & Lincoln, 1994). However, Denzin and Lincoln argue that a combination of these two approaches could ensure to a large extent that more interesting and convincing results could be obtained. The aim for further study in this paper is to make a quantitative study with questionnaires to newly started companies, i.e academic spin-offs and non-academic ventures as in the study of Roininen (2006), to test the conceptual model. But before conducting a questionnaire a focus group consisting of founders in their early stages of business start-up should be interviewed to get an understanding of critical activities, competences and resources in order to be able to get launched on a market.

4.1 Sample, Operationalizations and Analysis

The sample of new ventures consists of a cohort of firms started in Sweden during 2003, since then they have survived the critical limit of three years. It is important to be able to study how the new ventures have developed during time, and since it is a study of new ventures we do not want companies older than four years. The companies should consist of limited companies representing academic spin-offs and non-academic ventures (defined above) and the founders should engage fulltime in the venture. The reasons to distinguish the new companies are partly due to the accessibility of secondary data of limited companies in different databases. Thereby, we can confirm the ventures’ financial performance, number of employees, their business sector, their annual reports and their board of directors among other things. The second reason, to only account fulltime operating ventures, is due to that performance (or the outcome) between hobby- or part-time ventures might not be comparable.

When turning to operationalizations, we will mainly use scales from published studies, but in some cases we may need to develop subscales for this study. For instance, as we discussed in the network competence section, we lack the dynamic aspect of network competence in the published studies. Structural equation modelling will be used to analyze the results.
5. Final comments

Understanding more about early venture performance is of great interest to both scholars and practitioners. By knowing more about what makes a young venture succeed or fail, we can provide better support for practice and provide better policy for government. Networking has emerged as an important tool for young ventures to perform well, but it has not been tested on a large sample from a cohort before, where it is possible to capture differences between firms, for instance whether they are complex (which often academic spinoffs are) or simple (that the more generic firms often are). We thereby hope that this study will be able to shed some light on the impact of networking and networks on venture performance in early stages.

References


Paper 3:

Start-up’s achievement of competitive advantages through network relations

Sari Roininen

*International Journal of Technoentrepreneurship*
Start-ups’ achievement of competitive advantages through network relations

Sari Roininen

Department of Business Administration and Social Sciences,
Luleå University of Technology,
SE-97187 LULEÅ, Sweden
Fax: +46-920-49 21 60
E-mail: Sari.Roininen@ltu.se

Abstract: Inter-organisational relations are viewed as sources of essential information, resources, and capabilities, improving the innovativeness and performance of small ventures. There is however a lack of research investigating inter-organisational cooperation among new ventures and its effect on firm competitiveness. This study investigates how new ventures achieve competitive advantages through network relations. The results, targeting a sample of 171 Swedish start-ups, highlight the significance of strong ties for new ventures’ competitive advantages, especially among complex new ventures: the less familiar methods and the more task variety a new venture has, the stronger the link is between tie strength and achieved competitiveness.

Keywords: start-up; new venture creation process; venture complexity; network; tie strength; trust; competitive advantage; performance.


Biographical notes: Sari Roininen is currently a PhD student in Entrepreneurship at Luleå University of Technology. She received a Licentiate Degree in Philosophy in Business Administration and Economics, and is at present finalising her dissertation. Her Bachelors and Masters Degrees are from Luleå University of Technology. Her research interest is within new venture creation processes with a focus on entry strategies and resource configuration via network relations, and she teaches undergraduate students in Entrepreneurship and Industrial organization.

1 Introduction

New firms are important for economic movement (cf. Fischer and Reuber, 2003; Europe – The European Commission, 2003; Robson and Bennett, 2000), specially academic spin-offs and high-technology ventures play an important function in technology transfer (Shane, 2004; Nicolaou and Birley, 2003b). However, new ventures are often faced with resource constraints hampering their competitiveness, and ultimately, their performance. To overcome these shortcomings and to obtain competitive advantages it is facilitating for new ventures to engage in networks and alliances (Watson, 2007; Cooper, 2002). By engaging in networks, new ventures may get
hold of essential complementing or scarce information, competencies, and resources to improve their competitiveness, which in turn can increase the chances of survival and success. Especially weak ties are by Granovetter (1973) advocated as the form of inter-organisational relations that have a significant effect on firm performance and innovativeness.

Although much research have been made on the importance of networks for new venture performance (Watson, 2007), few empirical studies identify organisational characteristics influencing firm performance and growth (Walter et al., 2006). Diverse network relations might have various effects on diverse start-ups’ ability to achieve competitive advantage. For example, Singh (1997) state that businesses developing highly complex technologies are facing greater difficulties than those developing less complex technologies, which could emanate from the complex ventures’ difficulties in developing necessary competences. Similarly, Auerswald (2008) found that technological and organisational complexity in production, namely, high or low technology and complex or simple organisation, is affecting the survival of a firm. A low degree of task complexity in a new venture, implying that the problems to be solved are analysable and that there are few exceptions or variations in the task to be performed, is linked to high level of routineness. Building on the classic work of Perrow (1970), non-complex new ventures characterised by a high degree of routineness could hence be understood as ventures whose work tasks to a high degree could be readily rationalised and standardised. Adopting this definition, complex new ventures might need different resources, and thus network relations, to obtain competitive advantages than non-complex new ventures do.

The purpose of this paper is therefore to investigate the effect of network ties on new venture competitive advantages. In particular, the aim is to answer the following research questions.

- Do network ties enhance a new venture’s competitive advantages?
- Do complex new ventures have more use of network ties than non-complex new ventures?
- Are there any differences regarding the use of network relations between complex and non-complex new ventures?

To answer these questions a quantitative study of 171 new Swedish firms was made. New venture complexity was conceptualised as a moderating factor affecting the relation between a firm’s strategic partners and its competitive advantages.

This paper contributes to both theory and practice by empirically investigating how tie strength and trust influence complex new ventures’ competitive advantages, and thus their performance. By adding venture complexity into research on new venture creation processes, the understanding of new venture establishment processes and how these companies can overcome limits, such as a lack of vital resources, is extended. The paper proceeds as follows: in Section 2, a literature review of prior research is made leading to the generation of five hypotheses to be tested. In the following section, the method used in this study is described, and in the fourth section the empirical results are presented. Finally a discussion of the findings is presented in Section 5, followed by conclusions and implications of the interpreted results.
2 Theoretical framework

2.1 Advantages from networks

In entrepreneurship research, the discovery of an entrepreneurial opportunity and the exploitation of such an opportunity are two central themes (Shane and Venkataraman, 2000). There are, however, several perspectives and approaches on how to attain successful enterprising. One centre of attention is the facilitating means for new ventures to obtain competitive advantages, and thus enhanced firm performance, by engaging in networks and alliances (Watson, 2007; Cooper, 2002).

New ventures are often dependent on a range of necessary resources, capabilities, and information to successfully commercialise their business idea. It is, however, time consuming and costly for a new venture to develop all these necessities by themselves. Therefore, a new venture would be facilitated by external contacts holding the scarce and specialised resources and competences (Watson, 2007; Davidsson and Honig, 2003; Yli-Renko et al., 2001), inducing the firm to cooperate and engage in networks. At least four categories of resources are by Das and Teng (1998) suggested as important to bring into alliances: nodes representing financial, technological, physical, and managerial resources. Collaborations through networks can provide small and new ventures with important advice (Watson, 2007), difficult-to-imitate capabilities (Yli-Renko et al., 2001), improved product development (Baum et al., 2000), increased innovativeness (Ahuja, 2000; Baum et al., 2000), strengthened legitimacy (Hoang and Antoncic, 2003; Cooper, 2002; Lee et al., 2001), and faster new market and customer achievement (Walter et al., 2006; Cooper, 2002), affecting the new firm’s performance, growth, and survival (Watson, 2007; Walter et al., 2006; Lee et al., 2001). Achieved competitive advantages have thus been shown to affect firm performance, growth and survival, and are consequently assumed to improve new venture performance.

H1: Competitive advantages from network relations will contribute to enhanced performance.

2.2 Network relations

A common view of network relations is the expected benefits emanating from tie strength, developed by Granovetter (1973). He argues that because of the differential positions of the actors within a network, entrepreneurial outcomes can positively be affected by the access to diverse resources thorough weak or strong ties. Strong ties are often based on trust providing comfort in uncertain settings (Krackhardt, 1992), and facilitating to share crucial and confidential information (Nicolaou and Birley, 2003b), both serving a critical function for new ventures in their establishment. In addition, these ties are often durable because of the emotional investments they represent and the reliability they provide (Aldrich, 1999), insuring trustworthy cooperation developed from solidarity and mutual influence (Adler and Kwon, 2002). Thus, in a close network consisting of strong ties, actors often have frequent exchange and strong economic motives to be perceived as trustworthy partners (Granovetter, 1985). The disadvantage of strong ties is that they may exist at the expense of weak ties producing new information and new ideas (Adler and Kwon, 2002), important not at least for the exploitation of entrepreneurial opportunities. Weak tie relations thus often consist
of sporadic business-like relations with a low requirement on the efforts needed to
manage these relations (Oviatt and McDougall, 2005), easily bridging into new and
dissimilar information enhancing a venture’s competitive performance (Granovetter,
1973). Thus, for weak ties it is having the contact that matters for gaining
competitiveness, not how frequent it is.

Start-ups in particular are dependent on strong ties (Oviatt and McDougall, 2005;
Birley, 1985) because of the trustworthiness and the reliability they provide. However,
Davidsson and Honig (2003) found in a study of nascent entrepreneurs that weak ties
become important for profitability and access to particular knowledge later on in their
start-up process. For instance, when a new venture targets international markets, weak
ties enable cross-national links and thus access to vital information and knowledge about
foreign markets (Oviatt and McDougall, 2005). Consequently, access to new and vital
information through weak ties is important for new ventures’ competitiveness, but the
ventures’ need for crucial resources, support and trustworthy collaboration provided
by strong ties are even more important due to the ventures’ uncertain settings.

The following hypotheses are thus proposed:

H2a: Strong ties will contribute to the new venture’s competitive advantages.

H2b: Among strong ties, the stronger the tie is between a new venture and its contact,
the more the contact will contribute to the venture’s competitive advantages.

H3a: Weak ties will contribute to the new venture’s competitive advantages.

H3b: Among weak ties, there is no relation between contact frequency and how the
contact will contribute to the venture’s competitive advantages.

H4: The higher the trust is between a new venture and its contact, the more the
contact will contribute to the venture’s competitive advantages.

2.3 New venture complexity

However, the benefits of network relations could be greater for certain start-ups
compared to others. Contingency factors can affect the value of networks and how they
recognises the network content, task uncertainty, and network structure within and
beyond groups as factors affecting the link between firm performance and network
relations. It could thus be argued that various social structure theories hold in different
contexts (Nicolaou and Birley, 2003b), which could result in dissimilar benefits for the
focal firm as well as for the network. Although previous research has acknowledged these
moderating factors, few empirical studies have investigated these circumstances. It is in
this study argued that complex new ventures might be more favoured by networking than
less complex ventures are. Depending on the routineness of new ventures (Abernethy and
Brownell, 1997; Perrow, 1970), firms can be viewed as complex or non-complex.
Routineness is in this study referred to as the extent a firm employs well-known
techniques for handling tasks and the variety within these tasks. The less familiar
methods and the more task variety, requiring higher need for particular resources and
technology, the more complex the venture is. As a result, it is in this study assumed that
complex ventures would need different resources and competencies, obtained from other
partners, than non-complex new ventures to improve their competitive advantages.
These advantages should in turn be obtained through strong durable, reliable, and trustworthy ties. Thus,

$$H5: \text{The more complex a new venture is, the higher the contribution from strong ties to competitive advantages will be.}$$

To summarise, it is in this study assumed that tie strength is an important factors increasing a new venture’s competitive advantage, and ultimately its performance. Similarly, trust between the contact and the new venture might affect the gained competitive advantages since start-ups are believed to benefit from reliable and trustworthy contacts to develop its competitiveness. However, venture complexity is argued to be a moderating factor enhancing the new venture’s competitive advantages gained from network ties. Complex new ventures are assumed to benefit more from their ties than less complex new ventures. As a final point, the new venture’s increased competitiveness is also assumed to affect the firm’s overall performance, such as its sales, customer satisfaction, internal efficiency and innovativeness. This reasoning is illustrated in Figure 1.

**Figure 1** The effect of network relations on new venture competitive performance

---

### 3 Research design and method

#### 3.1 Data collection and sample

The research sample used to answer the research questions consisted of new Swedish firms (in all sectors) and was selected by using following criteria:

- the companies should have been started and registered in year 2003
- they should have been registered as limited companies
- the companies should still be active when the data were collected
- have achieved a turnover of at least 1 million Swedish kronor (SEK).\(^1\)

Among all eligible firms fitting these criteria a random sample was drawn using the Swedish database Affärsdata. To be able to make comparisons between different types of new ventures an additional sample was made. Academic spin-offs was due to their origin in technology and knowledge from universities (cf. Shane, 2004; Nicolaou and Birley, 2003a) considered as more complex than other types of new ventures, and in the apprehension that the sample did not include enough complex new ventures
a complementary sample of companies was made. This complementary sample was also obtained from Affärsdata and was based on the following selection criteria:

- the address should be the same as a Science Park or other companies in the park (since new academic spin-offs often are located in these parks)
- the companies should have been registered and started during 2002–2004.

These criteria did not however exclude other types of new ventures. The research instrument was a mailed questionnaire targeting the owner and/or manager of the new company. The respondent had to have taken part in the foundation of the company and thus have the experience of building up the company.

A number of 197 responses from a sample of 1384 were obtained, from which 171 was usable, corresponding to a 12% response rate. Although we would have wanted a higher response rate, a non-response analysis, covering size and financial ratios, indicated no significant differences between the responding and non-responding ventures.

3.2 Descriptive data of networks

To get a general picture of the venture’s network, the respondents were first asked to assess the number of strategic business partners, then if the contact was a small or large company, a university or a local authority, and third if the contact acted as a customer, supplier or partner (that is whether it was vertical or horizontal collaboration). A strategic business partner is in this study an organisation which has

- recurrent contact with the focal venture
- contributed to the venture’s competitive advantage.

The respondents were asked to report the most important business partners they have had since the start-up, what type of partner it was (see the definitions above), and if the partner was regional, national or international.

Next, to identify exchanges between the new venture and its business partners the respondents were asked to respond to their need for competences and resources as well as obtained competences and resources from each identified contact. The respondent chose between predefined items, where multiple answers were possible to report. The predefined competences consisted of five items;

- marketing and sales
- products and services
- methods and processes
- administration and management
- other competencies.

The resources measured consisted of six items;

- finance
- expertise and advice
- premises, machines and the like
status and legitimacy
• personnel
• other resources.

3.3 Measurement validation

In previous research, collaborative performances have been measured by using managerial assessments of performance. A subjective assessment where a manager appraises his/her overall satisfaction with firm action and performance is confirmed to highly correlate with objective measures such as financial returns (Kale et al., 2002) and sales growth (Walter et al., 2006). In this study, the company founder and/or manager assessed statements of the company’s relations with partners and the perceived results from these relations. The scales used in the study were partly adopted from previous studies, and partly developed to especially suit the examined context. A detailed explanation is provided below related to each variable. With an intention to develop a clear and relevant questionnaire, the scales were then pre-tested on one academic and one non-academic entrepreneur, where they expressed all thoughts that came into their minds as they completed the questionnaire. The received feedback then served as a base for developing the final measurements.

3.4 Dependent variable

New firm performance is multidimensional, and a comparison with competitors in the business sector reveals important information on the firm’s competitive advantages. As a result, to measure the new venture’s competitive advantage from contacts, the respondent was asked to assess the extent of achieved competitive advantage emanating from cooperation with each partner in their network. This was measured on a Likert scale ranging from 1 to 7 where 1 represented no contribution and 7 represented a great extent of contribution.

Furthermore, to get information of the firm performance (denoted competitive performance in Figure 1), the respondents were asked to rate the performance of their own firm compared to competitors in their business sector. The assessments covered several dimensions such as
• customer satisfaction
• customer loyalty
• sales growth on established markets
• market growth on new markets
• establishment of competitive products/services
• effectiveness of methods and processes (productivity)
• ability to develop new products/services
• the firm’s ability to attract qualified employees.
These items were chosen to enable measuring performance on various aspects vital for new venture performance and growth. The items were measured by asking the respondent to indicate their performance in relation to other companies in the business sector. The scale ranged between –3 (considerable worse than others) and +3 (considerable better than others). To reduce the amount of performance data a factor analysis was made resulting in three performance measures: customer performance ($\alpha = 0.79$), sales performance ($\alpha = 0.74$), and internal efficiency ($\alpha = 0.78$).

Looking at the firm level, a new venture’s innovativeness was in this study used as one aspect of firm performance as well. Innovativeness can be referred to creativity, the introduction of new products/services, and novelty (Lumpkin and Dess, 1996), and is understood as a predictor of future profitability. Innovativeness was measured on a Likert scale between 1–7 addressing three items ($\alpha = 0.89$);

- emphasis on R&D, technological leadership and innovations
- amount of new lines of products/services within the last three years
- the degree of changes in products or services.

3.5 Independent variables

To assess frequency between the firm and its business partner, i.e., tie strength in Figure 1, the respondents were asked to state the regularity of contacts between them, and to assess the degree of trust between them, i.e., tie trust in Figure 1. The answers were then grouped into two categories:

- contacts less than once a month (less than 10 times per year)
- contacts at least once a week (at least 45 times per year).

With Granovetter’s (1973) definition of contact frequency as a basis, where rare contact occurs once a year or less and frequent contact occurs at least twice a week, the first category in this study was considered as weak ties and the second as strong ties. Additionally, to measure the extent of trust between the firm and its partner, the respondent was asked to assess the amount of trust on a seven-point scale where 1 represented no trust and 7 represented very much trust.

3.6 Moderating variable

The new venture’s extent of complexity is a moderating variable affecting the relation between network ties and firm performance in Figure 1. Depending on the new venture’s routineness, firms can, as noted, be labelled as complex or non-complex. This was measured by a seven-point scale, ranging from low to high degree of routineness adopted from Abernethy and Brownell (1997). The four items ($\alpha = 0.811$) addressed were:

- recurrent work tasks
- repetitiveness of the work task
- established procedures and practices
- earlier work experiences needed.
By reverse-coding the answers on routineness, the scale showed the degree of complexity instead.

### 3.7 Control variables

Environmental characteristics, such as the degree of hostility and dynamism, have together with firm size, in prior entrepreneurship research been shown to influence firm performance (cf. Wiklund and Shepherd, 2003; Lumpkin and Dess, 1996; Miller and Friesen, 1982) and were therefore controlled for. A seven-point scale, mainly adopted from Miller and Friesen (1982) and Slevin and Covin (1997), was used to measure the firm’s environmental conditions. Three items assessed the dynamism of the firm’s environment ($\alpha = 0.40$), and three items assessed the environmental hostility ($\alpha = 0.57$). Again, the respondents indicated on a seven-point Likert-type scale to what degree the environmental characteristics corresponded to their firm’s environment. The higher the index, the more dynamic and hostile was the firm’s environment. Firm size was measured by the new venture’s turnover.

Other organisational characteristics could also affect firm performance. Venture origin was used as a control variable exploring differences between different types of new ventures. For example, depending on whether the new venture was created in an academic or non-academic setting, it might have dissimilar constraints and needs. To determine the origin of the new venture, the respondent was asked to define the firm’s association with a university or research-institute. To be labelled as an academic spin-off, the owner/manager should have had a position, or still have some relation to, a university or research-institute, and/or the venture’s technology/product/service should have spun out of research or at least been co-developed with a university or research institute to be considered an academic spin-off. This definition is in line with Nicolaou and Birley’s (2003a) categorisation of university spinouts.

### 4 Results and analysis

#### 4.1 The new ventures’ network relations

This section describes differences between complex and non-complex new ventures. As Table 1 report, there are differences between complex and non-complex new ventures in their interaction with partners, and use of networks.

Complex new ventures collaborate more with large partner firms ($p < 0.01$) aiming for legitimacy ($p < 0.05$), expertise ($p < 0.01$), and competences within methods or processes ($p < 0.1$) to a higher degree than non-complex new ventures. In addition, complex new ventures cooperate with international partners ($p < 0.01$), to a larger extent than non-complex start-ups. This might be due to the ventures’ less familiar methods and higher task variety, which require specific resources and competencies from partners with extensive business experiences and international markets to be competitive.
The non-complex new ventures, on the other hand, have a tendency, although not significant, to cooperate more with large customer firms in a nearby region, to acquire other business-specific resources ($p < 0.05$) and management skills ($p < 0.05$) to a larger extent than complex new ventures do. However, almost 14% of their business partners were located internationally, indicating an awareness of the importance of going global to be competitive. These results indicate that a non-complex new venture might, similar to franchising organisations, be a component in a value chain. Shane and Hoy (1996, p.326) state that

“franchising is an organisational form which requires one set of entrepreneurs to cooperate with another set of entrepreneurs who purchase the former’s organisational routines … central to the firm.”

In a similar way, the non-complex new ventures in this study employ a higher degree of routineness calling for business-specific resources and competencies possessed by the customer firm, allowing them to be more standardised.

### 4.2 The effect of tie strength

It is in this study argued that external relations would increase a new venture’s competitive advantage. Table 2 reports that both strong and weak ties are positively linked to increased competitive advantage, supporting Hypothesis 2a and 3a. However, strong ties contribute slightly more than weak ties (4.83 compared to 4.27, $p < 0.05$), and also contain more trust (6.10 compared to 5.51, $p < 0.01$).
Table 2  Descriptives and correlations

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak ties</td>
<td>128</td>
<td>1.76</td>
<td>0.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong ties</td>
<td>113</td>
<td>4.64</td>
<td>0.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>355</td>
<td>3.09</td>
<td>1.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive advantages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak ties</td>
<td>127</td>
<td>4.27</td>
<td>1.87</td>
<td>0.22*</td>
<td></td>
</tr>
<tr>
<td>Strong ties</td>
<td>109</td>
<td>4.83</td>
<td>1.90</td>
<td>0.29**</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>345</td>
<td>4.65</td>
<td>1.85</td>
<td>0.19**</td>
<td></td>
</tr>
<tr>
<td>Trust among ties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak ties</td>
<td>130</td>
<td>5.51</td>
<td>1.52</td>
<td>0.15</td>
<td>0.37**</td>
</tr>
<tr>
<td>Strong ties</td>
<td>113</td>
<td>6.1</td>
<td>1.19</td>
<td>0.10</td>
<td>0.30**</td>
</tr>
<tr>
<td>Total</td>
<td>355</td>
<td>5.78</td>
<td>1.39</td>
<td>0.18**</td>
<td>0.33**</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01 (2-tailed).

In the hierarchical regression analysis presented in Table 3, three dependent variables, namely, all ties, strong ties and weak ties, were used and tested within three different models. The first model examined whether control variables had any effect on the dependent variables; the second the effect of the independent variables; and the third model examined the effect of the moderating variable. Hypothesis 2b proposed that the stronger the strong tie is the more it would improve a new venture’s competitive advantage, and was also supported by the data. Dividing all network relations by tie strength showed that strong ties ($\beta = 0.63$, $p < 0.01$) improved the new venture’s competitive advantage significantly, and surprisingly, tie strength within weak ties ($\beta = 0.70$, $p < 0.05$) was almost equally important. Thus, Hypothesis 3b, suggesting that contact frequency within weak ties would not have any effect on new ventures’ competitive advantages, was not supported. This could indicate that strong ties are as important as weak ties for the identification of competitive opportunities. However, it could also be a result of this study’s measurement where weak ties were defined to occur up to ten times a year instead of once a year or less as Granovetter (1973) suggested. As a result, it might be that the weak ties in this study in fact are occasional strong ties, impelling the new venture’s competitive advantage by the tie’s trustworthiness (reported below).

Trust was also suggested to enhance a new venture’s competitive advantage (H4), which also was confirmed. Strong ($\beta = 0.39$, $p < 0.01$), overall ties ($\beta = 0.35$, $p < 0.01$), as well as weak ties ($\beta = 0.30$, $p < 0.01$) with more trust also provided more competitive advantage. Considering the improvement of a new venture’s competitive advantage, this relation indicates trust to be central, not only within strong ties, but within weak ties too.

Moreover, the relation between all ties and competitive advantages was moderated by the venture’s complexity ($\beta = 0.14$, $p < 0.01$). In other words, a complex venture attains more competitive advantages through its network relations (looking at all ties) than non-complex ventures do. This might be a result of the venture’s complicated, and not easily imitated, process to exploit their entrepreneurial opportunity. This moderator was, however, not present when the relations were divided into strong and weak ties, and thus
Hypothesis 5 is only partly supported. An interesting result, displayed in model 5, is the direct effect of venture complexity within strong ties increasing the venture’s competitive advantage. A reasonable explanation could be that complex ventures, with fewer routines and larger task variety, have more to learn from strong ties how to jointly increase their competitive performance.

Table 3  Effects on new venture competitive advantages from relationships

<table>
<thead>
<tr>
<th>Model</th>
<th>All ties</th>
<th>Strong ties</th>
<th>Weak ties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Environmental hostility</td>
<td>-0.10</td>
<td>-0.07</td>
<td>-0.07</td>
</tr>
<tr>
<td>Environmental dynamism</td>
<td>0.23***</td>
<td>0.17**</td>
<td>0.21**</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.24**</td>
<td>0.25***</td>
<td>0.29***</td>
</tr>
<tr>
<td>Venture complexity</td>
<td>0.24***</td>
<td>0.26***</td>
<td>-0.19</td>
</tr>
<tr>
<td>Academic spin-off</td>
<td>-0.36</td>
<td>-0.27</td>
<td>-0.15</td>
</tr>
<tr>
<td>Tie frequency</td>
<td>0.25***</td>
<td>-0.18</td>
<td>0.63***</td>
</tr>
<tr>
<td>Trust between relations</td>
<td>0.36***</td>
<td>0.35***</td>
<td>0.39***</td>
</tr>
<tr>
<td>Complexity*tie frequency</td>
<td>0.14***</td>
<td>-0.06</td>
<td>0.27</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.07</td>
<td>0.20</td>
<td>0.22</td>
</tr>
<tr>
<td>$R^2$ adj.</td>
<td>0.06</td>
<td>0.18</td>
<td>0.20</td>
</tr>
<tr>
<td>$R^2$ change</td>
<td>0.07</td>
<td>0.12</td>
<td>0.09</td>
</tr>
<tr>
<td>Significance of change</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>$F$</td>
<td>5.14</td>
<td>11.28</td>
<td>10.96</td>
</tr>
<tr>
<td>Significance</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*p < 0.1; **p < 0.05; ***p < 0.01.

When controlling for external factors and firm size, the results show that new ventures’ network relations are significantly affected by a dynamic environment within weak ties ($\beta = 0.39, p < 0.01$) and by hostile environments within strong ties ($\beta = 0.42, p < 0.05$). In other words, the impact from occasional relations on competitiveness in a new venture is favoured by operating in a highly changeable environment, whereas the impact from strong ties is favoured by having a highly competitive environment. The fact that a new venture’s competitiveness is favoured by strong and weak ties in different environmental settings is interesting but not very surprising. In fact, frequent meetings with business partners would facilitate competitive, and maybe aggressive, advantages more in a highly competitive market with many competitors, whereas weak ties with access to new and diverse information and resources would result in higher competitiveness in a highly changeable market. In addition, a new venture’s competitive advantages through network relations are enhanced more among large firms (overall ties; $\beta = 0.29, p < 0.01$, strong ties; $\beta = 0.53, p < 0.01$) indicating that large firms might have a better capability to exploit these relations.
4.3 Enhanced performance

Further, this study assumed that the more competitive advantages a new venture gets from its network relations, the better its performance will be (H1). The correlation matrix in Table 4 indicates that relations ensuing improved competitive advantages would foremost affect a new venture’s sales and internal efficiency as well as its innovativeness. Moreover, strong ties increase a start-up’s customer performance considerably, whereas weak ties appear to decrease this performance. This latter correlation could depend on the difficulty to achieve customer loyalty and satisfaction without offering something more and valuable in relation to the firm’s product or service. Complementing resources and competences hence might be more easily achieved through close and frequent cooperation with the business partners. On the whole, the result indicates a positive relation between increased competitive advantages and enhanced firm performance, supporting the first hypothesis.

Table 4 The link between competitive advantages and performance

<table>
<thead>
<tr>
<th>Competitive advantages within:</th>
<th>Customer performance</th>
<th>Sales performance</th>
<th>Internal efficiency</th>
<th>Innovativeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weak ties</td>
<td>-0.022*</td>
<td>0.11</td>
<td>0.05</td>
<td>0.09</td>
</tr>
<tr>
<td>Strong ties</td>
<td>0.33**</td>
<td>0.40**</td>
<td>0.31**</td>
<td>0.42**</td>
</tr>
<tr>
<td>All ties</td>
<td>0.19</td>
<td>0.30**</td>
<td>0.21**</td>
<td>0.22**</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01 (2-tailed).

A rather surprising result is the correlation between strong ties and improved innovativeness, since prior research emphasise weak ties as the relation that provides new ideas and information strongly affecting innovation and superior performance (cf. Gulati et al., 2000; Granovetter, 1973). To see the effect of relations on new ventures’ innovative performance, the ventures’ innovations could have been divided into various degrees of innovations, ranging from incremental to radical (Henderson and Clark, 1990) which this study did not do. Regardless, innovation is strategically an important part of a venture’s entrepreneurial behaviour (Lumpkin and Dess, 1996), indicating that firms have to be able to sense opportunities and to transform technologies into commercial products/services to be competitive and achieve superior performance.

5 Discussion

The contribution of this study is the investigation of how tie strength and trust influence new venture competitive advantage, and thus their performance. Because few empirical studies include new venture complexity this concept was of particular interest in this study. With this focus, the understanding of new venture establishment processes and how these companies can overcome limits, such as a lack of vital resources, is extended. Research focusing on early phases in a venture’s existence could, by identifying key factors associated with firm performance, increase the knowledge and understanding of new venture creation and development. This understanding is important to policy-makers...
supporting the creation of new ventures to be able to offer suitable help to different types of new ventures and their different needs. For research in entrepreneurship, trying to solve a problem of high mortality among new ventures, this paper offers an additional but overlooked factor in previous research effecting new venture performance, namely venture complexity. Finally, network relations and venture complexity are for nascent entrepreneurs in their entrepreneurial endeavour important aspects affecting their ability to attain scarce and vital resources for their success.

Similar to Oviatt and McDougall (2005) and Birley (1985), network ties, especially trustworthy strong ties, was in this study important for new venture competitive advantages, and thus increased performance. The importance of strong ties and trust may be natural for the studied new ventures since they were not older than three years, and thus the importance of weak ties in obtaining competitive advantages might not have been noticed at this stage by the respondents. However, the link between increased competitive advantage and weak ties was significant when the trust between the new venture and its contacts also were high, implying trustworthiness and reliability (Adler and Kwon, 2002; Aldrich, 1999) to be important not only within strong ties but among weak ties too. Or, trust could be a moderating or mediating factor affecting the influence of tie strength on new ventures’ competitive advantages.

Rather surprising is the correlation between strong ties and improved innovativeness since prior research emphasise weak ties to be the relations providing new ideas and information strongly affecting innovation and superior performance (cf. Gulati et al., 2000; Granovetter, 1973). Strong ties are, on the other hand, considered to reduce the flow of new ideas (Adler and Kwon, 2002). Nevertheless, strong ties provide trust and strong economic motivations to collaborate in uncertain settings (Krackhardt, 1992; Granovetter, 1985), critical for a new venture’s product development and performance. Although strong ties were important in this study, weak ties are still effective means for new ventures attaining competitive advantages. With little expense new ventures can get hold of new and vital information increasing their competitiveness, particularly, as the results from this study show, in dynamic environments. Hence, it can be argued that network ties in general enhance new ventures’ competitive advantages.

Moreover, the result indicated that complex new ventures have more use of network ties than less complex ventures do. As a result, venture complexity is a moderating factor in obtaining competitive advantages from all type of relationships. Interaction with partners could thus lead to a learning process within complex new ventures on how to be competitive through collaboration. In addition, strong ties appeared to influence a new venture’s competitive advantage more if the venture operated in highly hostile environments, whereas weak ties influenced a new venture in dynamic environments. This supports Krackhardt’s (1992) and Nicolaou and Birley’s (2003b) argument that strong ties facilitate the sharing of essential and confidential information in a trustworthy and comfortable mode when the ventures operate in uncertain settings. There were also differences between complex and non-complex new ventures’ use of network relations. Legitimacy was more important to complex new ventures than to non-complex start-ups. This relation has in prior research been shown to be important among third parties, and for the venture’s possibility to obtain critical resources for its development and growth (Lee et al., 2001). In addition, complex new ventures had a tendency to cooperate with international partners to e.g., attain access to vital information and knowledge about foreign markets (Oviatt and McDougall, 2005). Non-complex start-ups, on the other
hand, required more business-specific resources and competencies from large customer firms indicating these ventures to be a component in a value chain.

5.1 Implications and further research

This study, as many other studies, has its limitations depending on its retrospective approach. Although the respondents were asked to recall events barely three years back, they might not have recalled them right. The respondents seemed to distinguish strong ties, that is, partners with frequent contact, as more important for their competitiveness than weak ties. Consequently, the survey might not have captured and measured the tie strengths’ effect on firm competitiveness and performance properly. Even though, this study showed some interesting results. Adopting a network perspective to explain differences in firm performance among new ventures engender the understanding of competitive sources. As Gulati et al. (2000) state, there is a rapid change in industries today changing the structure of companies and competitors, why networks and collaborations are becoming important for a firm’s strategic actions. New ventures entering (new) markets are from the beginning facilitated if they engage in networks and cooperations.

Although previous research highlights the importance of weak and strong ties for firm performance, it might be more interesting to study the relation between tie strength and new venture creation process instead. As this study implicates, weak ties might be more important in the beginning of a venture’s start-up process when the new venture is searching for entrepreneurial opportunities, that is, in the idea formulation or opportunity recognition phase (Deakins, 1999), whereas strong ties are essential when the venture is exploiting these opportunities (i.e., entry and launch, or post-entry development phase, (Deakins, 1999). Both Deakins (1999) and Davidsson and Honig (2003) point out that networks are important in the new venture creation process. However, strong and weak ties might become more important in different stages or phases of the process, and thus, an important question would be during what phases strong and weak ties are more favourable. A suggestion for further research is therefore to conduct longitudinal studies where the new ventures could be followed contemporaneous, and thus more in detail explore the dynamics involved.

In addition, it would be interesting to study if this study’s results have bearing on established small companies, or specific types of industries or companies, such as high technology sectors and academic spin-offs. For example, academic spin-offs often origin in technology and knowledge from university and research (cf. Shane, 2004; Nicolaou and Birley, 2003a), and target immature, international and volatile markets (Shane, 2004). They can thus be considered as a specific form of complex new ventures. As a result, academic spin-offs might need more particular competences, resources, and partners to be competitive. Non-academic start-ups, on the other hand, more often rely on traditional ways of doing business (Lee et al., 2001), and could therefore be considered as less complex ventures, relying on more general relations to be competitive. Additionally, in a systematic review of network research, Pittaway et al. (2004) found that more radical innovations demand interaction with universities, whereas incremental innovations tend to benefit mainly from relations with customers reducing the risk of failure. This could also be related to venture complexity where the expected returns from network relations may differ between complex and non-complex new ventures.
Finally, it might not only be the strength of network relations that affect new venture competitive advantage. The efficiency of a network might also be depending on the firm’s ability to develop and manage multiple relations, using appropriate governance mechanisms, sharing routines, and initiating necessary changes in the relations (Dyer and Singh, 1998) to achieve competitive advantages. This ability is by Walter et al. (2006) called Network Capability (NC) in their study of university spin-offs. Further research exploring various start-ups’ NC, and the development of this capability, would contribute to the understanding of how new ventures exploit entrepreneurial opportunities through participation in networks. Moreover, academic spin-offs and complex ventures might be more facilitated by networking than non-academic or simple start-ups, and thus they would need more NC to manage their network relations. Consequently, internal factors, such as venture complexity, as well as other factors would be interesting to future studies of new venture processes and networking.

References


**Note**

11 SEK = 0.11 EURO.
Paper 4:

Network capability as means for improved entrepreneurial strategy among young ventures

Sari Roininen

2nd revision in review for *Entrepreneurship and Regional Development*.
Network capability as means for improved entrepreneurial strategy among young ventures

Sari Roininen
Entrepreneurship, Department of Business Administration and Social Science, Luleå University of Technology, 97187 Luleå, Sweden, E-mail: Sari.Roininen@ltu.se

Abstract

This paper analyses how a newly established venture’s ability to develop and use external relations, called network capability (NC), contributes to enhancing its entrepreneurial orientation (EO) and performance. EO is recognised in the entrepreneurship literature as enhancing a firm’s performance. However, opportunity recognition and innovations often occur in interaction with external relationships where high levels of NC may enhance a young venture's EO and performance during the first years of operation. Moreover, external and internal factors could moderate the relationship between NC and EO or performance. In this paper it is expected that the young ventures internal and external complexity work as such moderator. In order to investigate the suggested relationships, a survey among 171 Swedish young ventures was used. The results confirm the positive link between EO and performance, whereas mixed results were found on the effect of NC on EO and firm performance.

Keywords: New venture; network capability; entrepreneurial orientation; firm performance, market maturity; venture complexity.
INTRODUCTION

New and young ventures are known for being restricted by their limited in-house resources (Baum et al., 2000; Stinchcombe, 1965), most notable in innovative and high-technology or knowledge-intensive firms requiring more resources for, e.g., product development and market introduction. However, these ventures can, through networking, acquire necessary resources such as knowledge (Wiklund & Shepherd, 2003) and important difficult-to-imitate capabilities embedded in inter-organisational relationships (Yli-Renko et al., 2001). Further, networks may create legitimacy for new and recently established ventures, especially if they are focused on creating a new market, or a niche within an established market (Cooper, 2002). Networks with a diverse mix of alliance partners may thus serve as sources of, and means for, new and young ventures to exploit entrepreneurial opportunities, and to gain faster revenue growth (Baum et al., 2000).

In order to obtain and utilise the network benefits, a range of differing skills are required by the new venture. Walter et al. (2006) stress that firm performance is positively influenced by a venture’s ability to develop and utilise inter-organisational relationships, called network capability (NC). By using NC, a venture can connect its own resources with those of its partners, and the venture will be more likely to manage future inter-organisational relationships with greater success by utilising these prior partner experiences (Rothaermel & Deeds, 2006; Kale et al., 2002). Moreover, employing NC also provide the venture to use entrepreneurial orientation (EO) in a more effective way to increase its performance (Walter et al., 2006). When a venture employs an entrepreneurial strategy (i.e. EO) it will be provided with competitive advantages differentiating them from other competitors on the market (Wiklund & Shepherd, 2005). Firms employing EO, that is, being innovative, proactive and risk-taking, have been proven to improve their sales growth (Covin et al., 2006), long-term financial performance (Wiklund, 1999; Zahra & Covin, 1995), and performance in the early stages of an industry’s life cycle (Lumpkin & Dess, 2001).

A recently established venture could thus overcome its resource constraints and improve its performance by employing NC to develop relations with partners favouring the venture’s competitiveness, and by having an entrepreneurial strategy. Much prior research has addressed firms’ relational skills (c.f. Walter et al., 2006; Kale et al., 2002; Baum et al., 2000), and it is widely acknowledged that NC as a construct has a positive effect on EO and firm performance (Walter et al., 2006). Still, studies on the influence of a venture’s specific NC dimensions, namely its coordination abilities, relational skills, partner knowledge and internal communication (Walter et al., 2006), on its entrepreneurial strategy and performance are missing. Prior NC studies have in addition merely focused on the development and utilisation of existing relationships, and thus lack a dimension, namely a venture’s ability to also identify and initiate new relations. In today’s dynamic business environment, it is important for new and young ventures to find and build new relationships possessing new information and resources since these often could extend the ventures’ entrepreneurial opportunities (Granovetter, 1973) and improve its innovative performance (Chesbrough et al., 2006; Chesbrough, 2003).
The purpose of this study is to investigate the association between a young venture’s different capabilities to initiate, develop and utilise network relationships and its propensity to be more risk-taking, innovative, and proactive, and thereby to increase its performance. It is, however, important to recognise that contextual factors could have a moderating effect on the proposed links. In order to give a more complete picture of increased firm performance and EO, Covin et al. (2006) and Wiklund and Shepherd (2005) call for more studies examining external and internal factors to a firm that could affect the EO and performance link. One such factor is the degree of internal and external complexity in which recently established firms operate, and that may be expected to have an impact on, e.g. a young firm’s market establishment process or its need for resource acquisition.” In this study it is anticipated that a complex young venture, here defined as a firm low in routine work (internally complex) and targeting immature markets (externally complex), could have more use of NC to increase its performance and EO than their less complex competitors. If a venture is complex it would thus possibly need more resources to accomplish its establishment than the firm possesses by itself, and would thus have more use of NC and EO.

The remainder of this paper is structured as follows. First a literature review covering entrepreneurial orientation, network capability and venture complexity is presented, followed by the study’s methodological aspects. The empirical results are then presented and discussed, ending up in conclusions and suggestions for further research.

THEORETICAL BACKGROUND

Entrepreneurial orientation (EO)
The anticipated positive effect of a firm’s entrepreneurial orientation (EO) has attracted much attention from entrepreneurship scholars in order to explain successful firm performance. Small firms with high EO have been found to improve their sales growth (Covin et al., 2006), long-term financial performance (Wiklund, 1999; Zahra & Covin, 1995), performance in the early stages of an industry’s life cycle (Lumpkin & Dess, 2001), and to overcome environmental and resource constraints (Wiklund & Shepherd, 2005). Small firms can thus primary improve their performance by acting more proactively in the anticipation of the future, making larger and more risky commitments in necessary resources, and pursuing new opportunities by acting more innovatively (cf. Miller, 1983; Wiklund, 1999; Lumpkin & Dess, 1996).

When a young venture, similar to an established small firm, initiates actions and is ahead of its competitors with introducing products/services, it acts proactively. Similarly, when the venture is creative and develops new ideas it acts innovatively, and is more risk-taking when it takes bold actions to maximise the exploitation of opportunities in uncertain situations which, on the other hand, also increases the risk of failure. Consequently, by acting proactively, innovatively and risk-taking a young venture has the potential to be more competitive and, consequently, increase its performance. This assumption is in line with Alvarez and Barney (2002) who argue that sustainable competitive resources are most likely to be developed in entrepreneurial small firms by using an entrepreneurial strategy, here defined as EO. However, the three dimensions of a firm’s EO might affect firm
performance differently and are not necessarily dependent of each other (Lumpkin & Dess, 1996). It is thus interesting to investigate them separately instead of as a construct which is commonly used in prior EO studies. However, as Wiklund and Shepherd (2005) point out, a one-way effect of EO on performance is not enough to give a complete picture of what is influencing firm performance. Instead, more studies of factors moderating or mediating this link are needed. Such research highlights how entrepreneurial strategies can effectively be managed on a firm-level (Covin et al., 2006) and what factors that have a positive effect on a firm’s EO.

The effect of network capability (NC) on EO

Networks and alliances are perceived as significant for a firm’s competitive advantage and success (cf. Burt, 1992; Granovetter, 1973), and firms often engage in alliances and networks to get access to important and complementary resources and information they lack, as well as to jointly develop new resources (Gulati et al., 2000; Ireland et al., 2002). This would be especially important for new and young ventures because they are often founded with limited resources and capabilities (Cooper, 2002). As Mazzarol and Reboud (2006) state, network relations provide important strategic information that is critical to the success of commercial operations. New ventures’ engagement in networks and alliances would thus increase their possibilities of getting competitive advantages enhancing firm performance.

However, to be able to benefit from the opportunities emerging from networks, a firm’s ability to manage multiple relationships is at least as important as the network per se. Consequently, attention paid to successful venture performance by collaboration and networking should focus on understanding the ventures’ capability for networking. Most of the studies within alliance or network capability have primarily studied the inter-organisational relationships of older established firms, and therefore, as Cooper (2002) points out, more studies of the relationships among start-ups are needed. Like prior studies on firms’ experiences from alliances, their ability to coordinate relationships, and their absorptive capacity, reflecting a learning perspective on the network or alliance capability of firms (cf. Heimeriks & Duysters, 2007; Rothaermel & Deeds, 2006; Walter et al., 2006; Anand & Khanna, 2000), this study focuses on a firm’s management of network relationships, i.e., its network capability (hereafter labelled as NC). NC is similar to Walter et al. (2006), here defined as a firm’s ability to develop and utilise inter-organisational relationships, which is not always that simple. A firm has to have relational skills to manage its partners and to understand what the partners’ capabilities and requirements are. With such knowledge, a venture should have a better ability to coordinate collaborating firms and activities. Then, by communicating and updating information throughout the firm, the output from collaboration would be further facilitated. Walter et al. (2006) argue that the more these dimensions increase in effectiveness, the more the magnitude of a venture’s NC enhances. However, in this study it is also believed that the ability to build new relationships is equally important for the capability of young ventures to attain competitive advantages through their network relations. It is not just the ability to manage and develop existing relationships that increases the likelihood of successful networking and the outcomes of it. Based on Granovetter’s (1973) work on tie strength, being open to relations with new partners would facilitate new approaches and ideas to the venture’s
competitiveness and performance. More recently (Chesbrough 2003, Chesbrough et al 2006), literature in the field of open innovation has argued that new relations are especially important for developing a firm’s innovative performance. Therefore, this fifth dimension is added to constitute the network capability of new and young ventures.

In general, new ventures are argued to be likely to be facing greater risks of failure than established firms due to their lack of relationships and track records as well as limited in-house resources (Cooper, 2002; Baum et al., 2000; Stinchcombe, 1965). These ventures should, for these specific reasons, be benefited from managing inter-organisational relationships so as to accomplish their entrepreneurial strategy and thus achieve competitive advantages that will improve their performance.

A new venture’s ability to coordinate inter-organisational activities connecting the participating firms into a network of mutually supportive interactions (Walter et al., 2006) could be influenced by the number of partners. As the number increases it may become difficult for a firm to manage and monitor these partners and activities; as well as to distinguish whether there are conflicting or overlapping partners or activities (Kale et al., 2002). To achieve effective networks and alliances facilitating the new venture’s competitiveness, it is important for the focal firm to be aware of potential partners, their capabilities, needs and requirements, and their trustworthiness (Gulati, 1999). Consequently, partner knowledge is vital for the firm’s ability to organise and structure information about partners, including suppliers, customers, and competitors (Walter et al., 2006). Partner knowledge is thus a precondition for enabling effective coordination between business relationships, as well as for avoiding the risk of moral hazard or opportunistic behaviour among partners (Lavie, 2006; Gulati, 1999). Having good relational skills are important for a young venture to manage multiple relationships since “business relationships are an exchange situation” where “a manager has to perceive and adapt to a variety of social situations, responding to a broad range of information and social stimuli from inside and outside the organisation” (Walter et al., 2006:547). Depending on how the venture communicates with collaborative partners outside the firm and (as explained later) how the firm makes use of and distributes individual experiences within the firm, their learning capability and experience of relational skills could be enhanced (Anand & Khanna, 2000). Greater experience gained from inter-organisational relationships enables the firm to form new collaborations with greater ease and frequency (Gulati, 1999). In addition, Walter et al. (2006) state that firms must connect their external relationships within the company so as to be open, responsive and learning within partnerships, i.e. internal communication abilities. In other words, for a firm to effectively learn from prior alliances, an important mechanism is to integrate and coordinate knowledge throughout the firm and thereby generate feedback from prior as well as ongoing experiences gained from collaborations (Kale et al., 2002). This component of a firm’s NC might be difficult to apply in new and young ventures, since these firms seldom have more than one or two employees at the beginning. Therefore the learning and experience often resides within the owners or managers of the venture. Finally, to be open to and to initiate new relations, the dimension lacking in previous studies, is here believed to be an important part of a young venture’s network capability, since new partners could provide new ideas or better resources for increasing the venture’s competitive performance. This should be especially important in dynamic and hostile environments that new ventures often face, and where e.g.
new and changing market demand is confronted to a limited pool of own, in-house resources. NC enables a link between different firm resources within a network in order to e.g. identify important means of market entry, to be innovative, and to learn of customer needs. It is thus the nature of the relationships between the partners in networks or alliances that becomes valuable, increasing young ventures’ entrepreneurial opportunities and performance.

Ventures facing high levels of competitiveness, technological change and a high degree of market uncertainty are argued to attain improved performance by forming ties with new partners possessing capabilities that the firm itself is lacking (Nohria & Garcia-Point, 1991). A young venture with high levels of the different NC dimensions is therefore here argued to enhance its propensity to take risks and to be proactive and innovative in its exploitation and exploration of entrepreneurial opportunities for enhancing performance.

Several scenarios are possible to be visualised considering how the different NC dimensions affect young ventures’ innovativeness, proactiveness, risk-taking and performance. First, initiating new relationships, together with having good partner knowledge and relational skills might facilitate a young venture’s propensity for taking risks and for acting innovatively in a joint search for new opportunities. Second, knowing your partners, having good relational skills and an ability to coordinate participating firms into a network of mutually supportive interactions could be important for the young venture to act proactively in its competitiveness. Third, having good partner knowledge and initiating new relations could furthermore prevent a young venture from being caught in relations that do not add to its competitiveness and performance. Fourth, good internal communication could be the ultimate ability to learn and understand how to recognise opportunities and to increase the young venture’s EO dimensions and performance. Finally, by using high levels of NC, a young venture can learn what type of partners it needs and are suitable for their future objectives.

**Contextual factors affecting the relationship**

However, the five dimensions of NC might not necessarily have a direct effect on new and young ventures’ innovativeness, proactiveness and risk-taking and performance. Both external and internal factors influence these relationships (Wiklund & Shepherd, 2005; Lumpkin & Des, 1996). Prior research has shown differences among firms in their ability to manage inter-organisational relationships (Ireland et al., 2002), as well as in the outcomes of those relationships (Rothaermel & Deeds, 2006). The performance of a firm is thus context specific, and in this study it is understood that both internal and external factors act as moderating factors influencing the relationship between a young venture’s NC and its EO and performance. Cooper (2002) and Walter et al. (2006) reported that new venture’s collaboration with other firms enabled them to reach new markets and customers more quickly, and to develop their legitimacy in this critical stage. New and young ventures should thus be favoured by partners and networks in their establishment, and in this study it is believed that a venture’s target market moderates the relationship between the venture’s NC and its strategic actions in the form of high levels of EO. In other words, if a young venture acts proactively or responsively when identifying and satisfying customer needs (Coltman, 2007; Narver et al., 2004), this may influence to what extent the venture’s NC affects its EO and performance. New and young ventures targeting immature markets,
satisfying customers’ latent needs which they by themselves not are aware of, in this study identified as having a high degree of external complexity, might be able to make better use of network relationships. Therefore, a stronger link between the NC dimensions and EO dimensions as well as firm performance is expected.

The complexity within a firm, i.e. internal complexity, is also believed to be a moderating factor since different degrees of complexity might require different numbers of partners and thus different levels of NC. Internally complex ventures, with a number of inter-dependent routines, technologies, individuals, and other firm-specific resources linked to a particular knowledge asset, are assumed to make better use of their NC since these assets are more difficult to transfer to network partners (Rothaermel & Deeds, 2006). Similarly, building on Abernethy and Brownell’s (1997) and Perrow’s (1970) degree of routineness within the venture’s work task, if a young venture uses unfamiliar methods with a high level of variety within its tasks, requiring a greater need for specific resources and technology, this may require a number of collaborating partners and would thus derive more from its NC in enabling the utilisation of vital resources. By contrast, in firms employing well-known techniques for handling tasks that have less variety within these tasks, partners might not be so useful for accomplishing their tasks and thus the use of NC to increase firm performance is likely to be weaker.

**RESEARCH DESIGN AND METHODOLOGY**

**Data collection and sample**
In order to investigate the relationship between NC, EO and venture performance, a proportionate and random sample of young Swedish firms were chosen by means of the following criteria: (a) the companies had been started and registered in year 2003, (b) they should have been registered as limited companies, (c) the companies should still be active when the data was collected, and (d) have achieved a turnover of 1 million Swedish crowns\(^1\). The companies were obtained from the Swedish database Affärsdata, and the research instrument was a mailed questionnaire targeting the owner and/or manager of the company. The respondent was required to have taken part in the foundation of the company, and thereby have the experience of starting and developing the company. This criterion was important in order to obtain information concerning the first years of the company’s operation. A total number of 197 responses from a sample of 1384 (14%) were received, from which 171 (12%) were usable. Despite the low response rate, which could be due to the large number of enquiries that Swedish firms face, it was still possible to perform significant statistical analysis. A non-response analysis showed no significant differences in size, growth, business sectors or geographical location between the ventures that answered the questionnaire compared to those who did not. Therefore, the sample used in this study should be representative for – and generalisable to – firms fitting the selection criteria described above.

\(^{1}\) 1 SEK = 0,11 Euro
Variables and measures
With the aim of examining how network capability affects the entrepreneurial orientation of young ventures, the scales used were partly adopted from previous research measuring similar contexts, and partly developed specifically to suit this study’s specific context. In order to fit the items of this study into young ventures’ context, and to increase the respondents’ understanding of each item the survey was pre-tested among colleges and entrepreneurs. Based on the feedback from these persons the items were then further adjusted to fit the chosen context. To find structure and interrelationships among the items, and to find the underlying dimensions of each variable in this study, a factor analysis was conducted (Hair et al., 2006), presented in Appendix A and the following sections. The reliability of each variable was then assessed by the Cronbach’s alpha, where all values were higher than 0.50 which is the limit for a variable to be considered as significant (Nunally, 1978.). All variables were moreover tested for normality and turned out to be acceptable.

Dependent variable
The strategic posture of a young venture, namely being innovative, proactive and risk-taking, were considered as dependent variables. The three EO constructs; risk-taking propensity ($\alpha = 0.85$), proactive orientation ($\alpha = 0.89$), and tendency towards innovation ($\alpha = 0.89$), were each assessed by three items, commonly for capturing firm-level entrepreneurship. The scales were thus adapted from existing instruments, although they were measured by a single-sided scale in opposite to the bipolar scales used in prior studies (c.f. Covin & Slevin, 1989; Lumpkin & Dess, 2001; Miller, 1983; Wiklund, 1999). The respondents were asked to characterise their firm’s strategic posture on a 7-point Likert scale, where higher scores indicated a more entrepreneurially oriented (EO) strategic posture.

The other dependent variable was the young ventures’ overall performance, which consists of two dimensions, i.e. internal efficiency and sales performance (see items in Appendix A). The performance items ($\alpha = 0.82$) were measured by a multiple-item scale where the respondents were asked to indicate to what extent the objectives of their company actually were achieved in comparison to competing businesses in the market. The scale ranged from -3 – considerably worse than others – to +3 – considerably better than others. Although many researchers believe objective measures to be the only valid variables, financial measures are not always congruent with the intended goals and performances of small and young firms. Subjective assessments of a manager appraisal over his/her satisfaction with the firm’s action and growth appraisal reveals important additional information (Birley and Westhead, 1994) and highly correlates with objective measures such as returns (Kale et al., 2002) and sales growth (Walter et al., 2006). Firm performance measurements have to take other indicators than merely financial into account when evaluating small businesses performance (Lumpkin and Dess, 1996) since overall satisfaction of the firm’s existence might weight more than the financial goals in small companies. Moreover, small firms with limited in-house resources need to be efficient and effective to be competitive, and thus assessing how well small firms provide markets with products/services that are required, and how well the firm utilise or develop the internal
efficiency to produce the products/services, is crucial for understanding their increase in markets and sales compared to competitors (Ylinenpää, 1997).

**Independent variables**
The independent variables were defined as different dimensions of a young venture’s network capability (NC), which captures the degree of the firm’s ability to develop and utilise inter-organisational relationships. As Walter et al. (2006) point out, NC is important for a venture to integrate resources from external partners, and to fuse the venture’s activities with those of its network partners. There were 15 items in total within the NC construct, as presented in Appendix A, and the respondents were asked to rate these on a 7-point Likert scale. Twelve of these items were adapted from Walter et al. (2006), and they measured the firm’s coordinative skills ($\alpha = 79$), relational skills ($\alpha = 88$), partner knowledge ($\alpha = 90$), and internal communication ($\alpha = 71$). The remaining three items were self-developed to capture the young venture’s ability to recognise and initiate new relationships ($\alpha = 90$).

**Moderating variable**
The venture’s degree of complexity is seen as a moderating variable affecting the link between the young venture’s NC and its EO and performance. Depending on the venture’s degree of routineness (Abernethy & Brownell, 1997; Perrow, 1970), firms can be referred to as internally complex or non-complex. Internal complexity was also measured by the use of a seven-item scale adopted from Abernethy & Brownell (1997), ranging from low to high degree of routineness, as presented in Appendix A. By reverse-coding the answers on routineness, the scale showed the degree of venture complexity ($\alpha = 0.81$).

The other moderating variable is the ventures external complexity ($\alpha = 0.65$), measured by the use of a 7-point Likert scale where high rates are linked to immature markets and low rates to mature markets. These measurements are also presented in Appendix A.

**Control variables**
Different environmental characteristics, together with the ventures’ origin and size, may affect the venture’s NC, EO and performance, which is why these factors were controlled for. Environmental circumstances, such as the degree of hostility and dynamism, have in prior entrepreneurship research been viewed as an intervening factor concerning the performance of firms (c.f. Lumpkin & Dess, 1996; Miller & Friesen, 1982; Wiklund & Shepherd, 2003). A seven-item scale, adapted from Miller and Friesen (1982) and Slevin and Covin (1997), was used to measure the firm’s environmental circumstances. Three items assess the dynamism of the firm’s environment ($\alpha = 0.59$), and four items assess its hostility ($\alpha = 0.57$). Again, the respondents indicated to what extent the environmental characteristics corresponded to their firm’s environment. The higher the index, the more dynamic and hostile is the firm’s environment.

Organisational characteristics could also affect the performance and EO of firms (Wiklund & Shepherd, 2005). An important organisational characteristic in this study is the ventures’ origin, i.e. in this study defined as whether the young ventures were created within an academic or a non-academic milieu. To determine the origin of the ventures, the
respondents were asked whether the firm had any association or cooperation with a university or research-institute. Here the owner/manager should have had a position in or related to a university or research-institute, and/or the venture’s technology/product/service should have been spun out of research, or at least been co-developed with a university or research institute, to be considered as an academic spin-off. This definition is in line with Nicolaou and Birley’s (2003) categorisation of university spin-offs.

Finally, young ventures of different size, measured by the turnover, and with different network structures, i.e. the number of partners within suppliers, customers and other firms, may show different characteristics; therefore these factors were also controlled for.

Analysis
The analysis of the study was completed by structural equation modelling (SEM), using AMOS 7.0 as software. First, a factor analysis was made in SPSS 15.0 to determine whether the dimensions of a young venture’s NC, EO, performance and venture complexity (internal and external) represented distinct constructs (loadings and reliability are presented in Appendix A). The analysis showed that all variables had good measurement properties. Then the SEM was performed to investigate the influence of the NC dimensions on EO and performance, and whether there were any moderating effects. The recommendations by Schumacker and Lomax (2004) and Browne and Cudeck (1993) were followed in interpreting the multiple model fit indices (i.e. the values within brackets), which all were in line with the recommended levels indicating a satisfactory model fit: $\chi^2 = 109.7, df = 50$; $\chi^2/df = 2.19 (<3.00); p < 0.00, \text{RMSEA} = 0.08 (<0.08), \text{RMR} = 0.05 (<0.05), \text{NFI} = 0.94 (>0.90); \text{CFI} = 0.97(>0.09); \text{GFI} = 0.93 (>0.09)$.

RESULTS
First the Pearson correlations between network capabilities (NC), entrepreneurial orientation (EO), venture performance, and internal and external complexity was calculated. The results in Table 1 show a significant and positive relation between all NC and EO components. External complexity also has a significant link to a venture’s EO as well as to its NC, whereas internal complexity only correlates with two dimensions of EO; innovativeness and proactiveness. Looking into correlations of venture performance, the matrix only shows a positive link between two dimensions of a young venture’s EO and performance; its proactiveness and innovativeness, and two dimensions of its NC and performance; its coordination skills and partner knowledge. Thus, not all dimensions of the NC and EO constructs are linked to venture performance on a bivariate level. In addition, venture performance is also related to external complexity.
### TABLE 1. Correlation matrix and descriptives

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. EO - risk taking</td>
<td>3.94</td>
<td>1.67</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. EO - proactiveness</td>
<td>4.21</td>
<td>1.69</td>
<td>.50**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. EO - innovativeness</td>
<td>3.80</td>
<td>2.04</td>
<td>.49**</td>
<td>.66**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. NC - coordination</td>
<td>4.91</td>
<td>1.43</td>
<td>.37**</td>
<td>.38**</td>
<td>.39**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. NC - relational skills</td>
<td>5.7</td>
<td>1.35</td>
<td>.39**</td>
<td>.44**</td>
<td>.28**</td>
<td>.67**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. NC - new relations</td>
<td>5.5</td>
<td>1.49</td>
<td>.52**</td>
<td>.41**</td>
<td>.42**</td>
<td>.52**</td>
<td>.63**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. NC - partner knowledge</td>
<td>5.4</td>
<td>1.32</td>
<td>.33**</td>
<td>.41**</td>
<td>.27**</td>
<td>.50**</td>
<td>.59**</td>
<td>.46**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. NC - internal communication</td>
<td>4.9</td>
<td>1.37</td>
<td>.29**</td>
<td>.30**</td>
<td>.33**</td>
<td>.47**</td>
<td>.39**</td>
<td>.35**</td>
<td>.40**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Internal complexity</td>
<td>3.05</td>
<td>1.43</td>
<td>.09</td>
<td>.19*</td>
<td>.27**</td>
<td>.06</td>
<td>.02</td>
<td>.08</td>
<td>-.02</td>
<td>-.02</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. External complexity</td>
<td>4.32</td>
<td>1.51</td>
<td>.39**</td>
<td>.43**</td>
<td>.51**</td>
<td>.41**</td>
<td>.35**</td>
<td>.36**</td>
<td>.21*</td>
<td>.31**</td>
<td>.18*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11. Performance</td>
<td>0.81</td>
<td>0.88</td>
<td>.18</td>
<td>.37**</td>
<td>.38**</td>
<td>.32**</td>
<td>.11</td>
<td>.12</td>
<td>.21**</td>
<td>.14</td>
<td>.15</td>
<td>.27**</td>
<td>1</td>
</tr>
</tbody>
</table>

** p< 0.01; * p<0.05 (2-tailed)
Next, the effects of all NC dimension in a young venture on its EO and performance were investigated. Table 2 presents the results of an SEM analysis, and shows that a venture’s relational skills (b = 0.19, p<0.05) and its knowledge of external partners (b = 0.23, p<0.01) have a direct positive effect on a young venture’s tendency to act proactively, indicating that managing external relations is important for the recognition of entrepreneurial opportunities and to adapt to a variety of social situations in order to be competitive. A young ventures ability to initiate and build new relations has a positive effect on its propensity to take risks (b = 0.40, p<0.01) and to be innovative (b = 0.18, p<0.01), indicating that this added dimension of NC is important for new and young ventures to be able to act entrepreneurially. Moreover, the results show that environmental hostility influences a young venture’s EO positively (risk-taking: b = 0.20, p<0.01; proactiveness: b = 0.16, p<0.05; innovativeness: b = 0.27, p<0.01), indicating that hostile environments, with aggressive competitiveness, push a young venture to seek new opportunities and to act quickly. In addition, the influence of venture origin on a young venture’s innovativeness shows that academic spin-offs, as could be anticipated, are more innovative than non-academic ventures (b = 0.71, p<0.01), which could be explained by the origination of academic spin-offs in knowledge intensive or high technology research.

Whether a young venture is internally or externally complex is also linked to the venture’s EO. Targeting immature markets, i.e. external complexity, is linked to higher levels of all dimensions of the firm’s EO (risk-taking: b = 0.20, p<0.01; proactiveness: b = 0.25, p<0.01; innovativeness: b = 0.34, p<0.01), whereas a venture with less routineness, i.e. internally complex, is linked to higher proactiveness (b = 0.16, p<0.05) and innovativeness (b = 0.18, p<0.01).

### TABLE 2. Effects of NC on start-ups’ EO and performance, with the moderation of venture complexity.

<table>
<thead>
<tr>
<th>SEM</th>
<th>EO - risk-taking</th>
<th>EO - proactiveness</th>
<th>EO - innovativeness</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental hostility</td>
<td>.20**</td>
<td>.16*</td>
<td>.27**</td>
<td></td>
</tr>
<tr>
<td>Academic spin-off</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC - relational skills</td>
<td>.40**</td>
<td>.19*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC - new relations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC - partner knowledge</td>
<td>.23**</td>
<td>.18**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal complexity (IC)</td>
<td>.16*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External complexity (EC)</td>
<td>.20**</td>
<td>.25**</td>
<td>.34**</td>
<td></td>
</tr>
<tr>
<td>EO - innovativeness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC - Coordination*EC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC - Relational skills*EC</td>
<td>.54**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p<0.05; *p<0.01

χ² = 109.7; df = 50; χ²/df = 2.19; p < 0.00, RMSEA = 0.08, RMR = 0.05, NFI = 0.94; CFI = 0.97; GFI = 0.93.

These results suggest that external complexity pushes a young venture to use EO to a high extent in order to attract customers and satisfy their latent needs, and for internally complex
ventures to use EO in order to achieve competitiveness. It is also in this study suggested that the effect of a young venture’s NC on its EO and performance could be moderated by the firm’s internal and external complexity. However, this was not confirmed by the results, as only one suggested moderating effect (out of 20 possible) was found in the analysis.

The effect of NC on venture performance was not found, instead EO, or at least innovativeness ($b = 0.18, p<0.05$), is important for enhanced performance. Although the five dimensions of NC did not have a direct effect on performance, the results in Table 2 show that there is a moderating effect among externally complex ventures. Young ventures targeting immature markets are favoured by the use of coordination abilities ($b = 0.54, p<0.1$), but disadvantaged by high relational skills ($b = -0.38, p<0.1$). These results signal that engaging in inter-organisational activities connecting the participating firms into a network of mutually supportive interactions is important for young venture performance when targeting immature markets. But responding to a broad range of information and social stimuli from external relations in the same situation appears to occur at the expense of the firm’s performance.

**DISCUSSION**

This study contributes to the understanding of factors influencing a recently established venture’s competitiveness and performance. Specifically this study investigates which of a young venture’s different capabilities in managing inter-organisational relations enhances the firm’s EO and performance, and if venture complexity is affecting these links. The results are discussed from both a theoretical and a practical point of view, followed by conclusions. Finally, limitations of this study are presented, and suggestions for further research are made.

**The effect of NC on EO and performance**

EO is argued to improve a venture’s performance (Walter et al., 2006; Lumpkin & Dess, 2001, 1996; Wiklund, 1999; Zahra & Covin, 1995), and to help a firm to overcome environmental and resource constraints (Wiklund & Shepherd, 2005) since these are crucial circumstances for new and young ventures to survive. Additionally, NC, as a concept, is argued to have a positive effect on a venture’s EO (Walter et al., 2006) and performance, especially for ventures operating in a highly hostile environment (Nohria & Garcia-Point, 1991). However, the results from this study only partly support the prior findings. Having good relational skills and partner knowledge was found to directly increase a young venture’s ability to act proactively in future anticipations, whereas the firm’s ability to initiate new relations increases both its risk-taking and innovativeness. This new dimension of NC, namely to be open to new relationships, has in this study been shown to be an important part of a young firm’s NC and should thus be taken into consideration in future NC-related research. The ability to be open to new relations should be vital for all small firms lacking resources or competencies to perform better. Innovation was furthermore the only dimension of EO in this study that increased venture performance, while no dimensions of NC had any direct effect on performance. On the other hand, NC increased a young firm’s ability to use an entrepreneurial strategy, defined as EO in this study, implicating that those ventures lacking EO capabilities could ally with partners possessing these capabilities and thus improve their performance. The lack of influence of NC on
performance is however not surprising, considering that new and young ventures often have few partners and networks, and are probably still developing their network capabilities. Overall the results from this study support previous research suggesting that ventures benefit from the opportunities emerging from networks, by using the capability to initiate, develop and utilise network relations (cf. Heimeriks & Duysters, 2007; Rothaermel & Deeds, 2006; Walter et al., 2006).

**Moderating factors effecting young ventures’ NC and EO**

It was further assumed in this study that internally and externally complex ventures should achieve higher EO by utilising NC, since those ventures would require more collaboration and networking in order to discover and exploit their entrepreneurial opportunities. However, the results did not show such moderating factors on a young venture’s EO, implying that the use of NC would not be of that significance to highly complex young ventures in their strategic posture, i.e. EO. Nor was an internally complex young venture’s performance improved by the use of NC, indicating that when a complex young venture has difficulties in understanding the complexity of its own tasks, with asset knowledge being tacit, it might not be able to transform its assets and capabilities to partners in a network, and will thus have less use of NC. This result is contrary to Rothaermel and Deeds (2006), who argue that ventures with inter-dependent routines and specific resources would need higher levels of NC due to the difficulty in transferring these assets. There was on the contrary a positive moderation effect on performance when the young venture targets immature markets, i.e. external complexity. When a venture targets immature markets, that is, seeks to satisfy a customer’s unaware needs, its ability to coordinate collaborative partners and activities within a network is found to significantly affect performance. This is not unexpected, since coordinating activities connecting the participating firms into a network of mutually supportive interactions are important for young ventures (Walter et al., 2006), especially those lacking necessary capabilities and resources. Firms utilising a proactive market orientation (Narver et al., 2004) may need more inter-organisational relations be able to fulfil the opportunity to create added value for its customers. This relation is similar to Cooper’s (2002) and Walter et al.’s (2006) findings where start-ups’ collaboration with other firms enabled them to reach new markets and customers more quickly. However, having high relational skills reduced the venture’s possibility to attain increased performance, implying that managing multiple inter-organisational relations is, despite its benefits when targeting immature markets, resource consuming and thus hampers the performance of young ventures.

Additionally, the results showed that external complexity has a direct effect on a young venture’s EO, indicating that ventures targeting immature markets tend to be more innovative, proactive and risk-taking, which is probably needed in order to attract the customers and satisfy their needs. Likewise, internally complex ventures with unfamiliar methods and inter-dependent routines (cf. Abernathy & Brownell, 1997) had a direct and positive effect on the young ventures’ proactiveness and innovativeness, suggesting that internally more complex ventures tend to be ahead of their competitors in their anticipation of the future when implementing an entrepreneurial strategy (cf. Lumpkin & Dess, 2001; 1996).
As a result, the implications of whether high levels of NC are facilitating young ventures or not are two fold. On the one hand, a young venture’s EO is benefited by new relations, good partner knowledge and relational skills, suggesting that networking and NC is good for young ventures. On the other hand, if a venture is externally complex its performance could be negatively affected by high levels of coordination abilities, suggesting that managing inter-organisational relationships and networking is time and resource consuming.

**Contextual effects**

A primary factor found to be influencing a young venture’s innovativeness was the ventures’ origin. Academic spin-offs were significantly more innovative than non-academic ventures which is not surprising since academic spin-offs often originate from research, normally build on new technology and knowledge (Wright et al., 2007; Nicolaou & Birley, 2003).

The different contextual factors affecting young ventures’ EO in this study confirms the fact that EO – performance relationships depend on the context in which they occur (Cooper, 2002; Lumpkin & Dess, 1996; Walter et al., 2006). Venture complexity may be understood to be especially relevant for academic spin-offs, as these ventures often have to overcome a high level of market uncertainty in order to convince potential customers of the product value (Shane, 2004). Marketing is a particularly critical issue for all new and young ventures, but for many high technology firms it may be especially problematic (Chorev & Anderson, 2006). As Chorev and Anderson point out, these ventures often operate in a new, or yet to be established, market with an unclear application and a need to internationalise rapidly. Consequently, contextual factors are important for ventures getting out on the market; hence implying a need for awareness among practitioners, researchers and policymakers engaging in new and young ventures’ process of getting established on a (new) market. As Bygrave (1989) declared almost two decades ago, the entrepreneurial process is different among new ventures, and will thus benefit from different support structures.

**Limitations and suggestions for future research**

As within other studies, this study had its boundaries. A limitation was the low response rate and the possibility to investigate only a snap-shot of the young ventures’ situations. Nonetheless, the results are valid to shed more light on the role of NC as a tool for competitiveness among young ventures. Hopefully, future studies can build on this and provide answers to questions that this study has begun to formulate.

For instance, external complexity had a significant effect on the performance and entrepreneurial orientation of firms in this study, therefore this area would be an interesting subject of further research. Firms targeting immature markets by satisfying latent customer needs and ‘leading’ them in their satisfaction (Narver et al., 2004) have an opportunity to create added value resulting in higher customer dependency and loyalty, and thus firm performance. This approach will however require more EO and NC from new and young ventures, which in turn could be time consuming and thus inhibit performance in the short-run. Therefore a longitudinal study of new and young ventures’ market approaches, taking both first-mover, second-mover and later entrant advantages into account, as well as the
impact of EO, could give rise to a deeper knowledge and better understanding of how the market orientation of new and young ventures affects their performance. Another suggestion for future research would be to make a qualitative study of new and young ventures’ utilisation of NC and EO, with the objective of more thoroughly investigating how NC affects EO, and firm performance. Finally, it would be interesting to investigate the learning process so as to understand how new and young ventures build and learn to use NC and EO capabilities. Assuming that all ventures have the same level of inter-organisational relationships in their entrepreneurial endeavour, what is it that determines the success of developing and utilising NC and EO to a greater extent?

References:


### APPENDIX A. Model measurements

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Factor loadings</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales growth in established markets</td>
<td>.79*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market growth in new market</td>
<td>.71*</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>The competitiveness of our products/services</td>
<td>.68*</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>The efficiency in our processes (productivity)</td>
<td>.77*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Our ability to develop new methods and process</td>
<td>.75*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Our ability to employ personnel with necessary skills/competence</td>
<td>.69*</td>
<td></td>
</tr>
<tr>
<td><strong>NC - Coordination</strong></td>
<td>We analyse what we would like and desire to achieve with which partner</td>
<td>.78**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>We develop relations with each partner based on what they can contribute</td>
<td>.58**</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>We discuss regularly with our partners how we can support each other</td>
<td>.81**</td>
<td></td>
</tr>
<tr>
<td><strong>NC - Relational skills</strong></td>
<td>We have the ability to build good personal relationships with our business partners.</td>
<td>.64**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>We can deal flexibly with our partners</td>
<td>.78**</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>We almost always solve problems constructively with our partners</td>
<td>.78**</td>
<td></td>
</tr>
<tr>
<td><strong>NC - New relations</strong></td>
<td>We are constantly open to new relations with new partners</td>
<td>.85**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>We have the ability to initiate a mutual relationship with new partners</td>
<td>.75**</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td>We are alert to finding new partners</td>
<td>.86**</td>
<td></td>
</tr>
<tr>
<td><strong>NC - Partner knowledge</strong></td>
<td>We know our partners' markets</td>
<td>.87**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>We know our partners' products/services</td>
<td>.86**</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td>We know our partners' strengths and weaknesses</td>
<td>.88**</td>
<td></td>
</tr>
<tr>
<td><strong>NC - Internal communication</strong></td>
<td>We have regular meetings for every project</td>
<td>.67**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employees develop informal contacts among themselves</td>
<td>.83**</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td>Managers and employees often give feedback to each other</td>
<td>.78**</td>
<td></td>
</tr>
<tr>
<td><strong>Internal complexity</strong></td>
<td>The main work task is to a great extent of repetitive character</td>
<td>.83**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The main work task can mainly be viewed as routine tasks</td>
<td>.72**</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>The main work task can often be carried out by using well known and tested work routines</td>
<td>.88**</td>
<td></td>
</tr>
<tr>
<td><strong>External complexity</strong></td>
<td>The main work tasks require experience to be carried out</td>
<td>.76**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The organization's product/service satisfy latent or unaware customer needs</td>
<td>.72**</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>For customers ability to utilize our product/service a certain amount of education is needed attached to the sale</td>
<td>.79**</td>
<td></td>
</tr>
</tbody>
</table>

*Likert scale: -3 to +3; **Likert scale: 1-7
Paper 5:

Network structure and networking capability among new ventures: Tools for competitive advantage or a waste of resources?

Sari Roininen and Mats Westerberg

NETWORK STRUCTURE AND NETWORKING CAPABILITY AMONG NEW VENTURES: TOOLS FOR COMPETITIVE ADVANTAGE OR A WASTE OF RESOURCES?

Sari Roininen: Luleå University of Technology, Luleå, Sweden
Mats Westerberg: Luleå University of Technology, Luleå, Sweden

ABSTRACT

Factors of new venture survival have been driving researchers within entrepreneurship to find important models predicting improved performance. An important factor for understanding improved performance among start-ups is their use of entrepreneurial orientation (EO). However, more constructs and contextual factors are needed to get a better understanding of EO. This paper investigates Swedish new ventures focusing on how network structure and network capability affect EO and firm performance. We also test for moderating effects of venture complexity. The results shows that network structure and network capability affect EO but not performance, while EO affects performance. No moderating effects were present.

INTRODUCTION

New entrepreneurial ventures in their creation and exploitation of new opportunities have extensively been seen as a major engine of economic growth. Factors predicting new venture performance and success have therefore been important within entrepreneurship research all over the world (cf. Song, Podoynitsyna, van der Bij & Halman, 2008; Lash, Le Roy & Yami, 2007; Shrader & Siegel, 2007; Chorev & Anderson, 2006; Atuahene-Gima, Li & De Luca, 2006; Grandi & Grimaldi, 2005). One major problem new firms often face is a global and highly dynamic market, requiring specific strategic actions to achieve competitive advantages over established companies. New opportunities and good ideas can be created in networks where heterogeneous firms can act on information, resources and knowledge from contacts (Burt, 2004). Relationships are thus perceived as significant for new ventures’ competitive advantages and success (cf. Ireland, Hitt & Vaidyanath, 2002; Cooper, 2002; Burt, 1992; Granovetter, 1973). However, to achieve these advantages new ventures have to have an ability to develop and utilize business relationships. Prior research shows that firms with earlier collaboration experiences attain increased performance in next cooperation with other firms (Walter, Auer & Ritter, 2006; Kale, Dyer, & Singh, 2002; Anand & Khanna, 2000), indicating that it is beneficial to build
a networking capability within the firm. According to Walter et al. (2006, p. 542), network capability (NC) is “a firm’s abilities to develop and utilize inter-organizational relationships to gain access to various resources held by other actors”. NC thus seems to be as important for new ventures as for established firms to build and maintain relationships that facilitate a desired network structure that can improve its performance.

Firms’ entrepreneurial orientation (EO) is another interesting dimension of new venture performance. “High EO provides businesses the ability to find and/or discover new opportunities that can differentiate them from other firms and create a competitive advantage” (Wiklund & Shepherd, 2005, p. 72), as well as enhance firm performance (cf. Walter et al., 2006; Wiklund & Shepherd, 2003; Lumpkin & Dess, 2001). Moreover, EO is argued to facilitate value creation, in particular among new ventures when they have external ties that provide scarce, valuable, and complementary resources (Lee, Lee & Pennings, 2001) enhancing the venture’s competitiveness, and consequently its performance. In other words, start-ups would benefit by participating in networks to get access to scarce resources and thereby fully extracting their capability to identify and create entrepreneurial opportunities. As a result, there should be a positive link between the size of the network (since there are more opportunities with more network contacts) and EO. By a similar logic, network capability may also be linked to EO. A firm that possesses high levels of NC is better to access resources held by other firms, which should facilitate entrepreneurial behavior (i.e. EO).

Prior research, especially within EO and network capability, has mainly focused on established companies, requiring more studies of new ventures with a high priority to involve in opportunity-seeking actions that arise from uncertainty. EO has also been treated as a behavioral aspect rather than as a strategic feature of new and small companies. In addition, EO by itself might not be sufficient for improved performance, and most studies of EO have focused on the moderating role of environmental features, and therefore a contingency perspective emphasizing other constructs of interest might be needed (Lumpkin & Dess, 1996). This study aim to extend the research on EO and we thus combine network structure (NS), NC and EO to measure firm performance, an uncommon approach within EO studies. By using a survey, comprising 171 Swedish new ventures, we intend to get a better understanding of under what conditions new ventures can enhance their EO and performance. The overall research purpose is to identify how new ventures can enhance their performance, and thus their chances for survival. Two research questions are specifically of interest; Do start-ups improve their competitive performance by using an entrepreneurial strategy? Are network relationships a facilitating mean to the start-ups’ strategy? and Do complex ventures benefit more from using EO and network relations than less complex ventures?

This paper will hence contribute to practice with important implications that may increase new venture survival and performance, as well as to the theoretical development by testing three, in general separate, constructs on new venture performance.

A THEORETICAL FRAMEWORK

Lumpkin and Dess (1996) argue that EO refers to the process, practices, and decision-making activities, emerging from strategic choices, leading to new entry. In this study new entry is defined as an act of launching a new venture, and, since a majority of new firms often consist of only one person, the new firm is regarded as an extension of the individual who is in charge. Therefore, EO will be regarded as a firm level strategy undertaken to achieve improved competitiveness and performance. Using EO as a business level strategy entail that the new venture is acting more proactively in the anticipation of the future, making more large and risky commitments in necessary resources, pursuing new opportunities by acting more innovative, using autonomy as a means in accomplishing the business, and being aggressively competitive to
outperform industry rivals (Lumpkin & Dess, 2001, 1996). A combination of the first three dimensions, i.e. proactiveness, risk-taking, and innovativeness, is often seen as the most influential factors on a ventures entrepreneurial performance, especially in hostile and dynamic environments (cf. Walter et al., 2006; Wiklund & Shepherd, 2005; Wiklund, 1999; Zahra & Covin, 1995), and is thus the dimensions used in this study. Moreover, Lumpkin & Dess (1996) stress that EO might be the only source a new venture has when organizing resources efficiently and developing a strategy to perform better and to survive. Therefore, we hypothesize that:

**H1: The higher the new venture’s EO is, the better its performance will be.**

However, other contingency variables are needed to effectively model the EO-performance relationship (Lumpkin & Dess, 1996). Our aim is thus to investigate factors both external and internal to a new firm to get a better understanding of the EO-performance relationship (see figure 1). We will hence describe how network relations and the capability of developing and managing multiple network relations affect a new ventures EO and thus its performance. In addition, we put forward that venture complexity moderate this relationship. Venture complexity is conceptualized as having both an internal and an external dimension, to be discussed later.

**Figure 1.** A conceptual model of a new venture’s competitive performance.

New ventures are argued to face greater risks of failure than established firms due to their lack of relationships and track records, i.e. liability of newness (Baum et al., 2000; Stinchcombe, 1965) as well as limited in-house resources. To compensate this liability, new ventures could engage in networks. It is acknowledged that diverse network relations hold essential complementary or scarce information, competencies, and resources resulting in unique competitive advantages improving firm performance (Granovetter, 1973; Burt, 1992; Cooper, 2002; Davidsson & Honig, 2003). It is therefore in this study argued that new ventures would get hold of essential resources and capabilities enhancing their entrepreneurial opportunities and performances by engaging in network relations. And logically, due to the advantages achieved by networks, the result should be that the more relations a new venture has, the more competitive...
advantages it should obtain, and thus enhance its EO. Consequently, the following hypothesis is proposed:

\[ H2: \text{The more network relations a new venture has, the higher its EO will be.} \]

Walter et al. (2006) state that firm performance will be positively influenced by the company’s capability to manage inter-organizational relationships, that is, an ability to develop and utilize inter-organizational relationships, which the authors call network capability (NC). In addition, prior collaboration experiences will also enhance a firm’s ability to manage future relationships with a greater success (Kale et al., 2002; Rothaermel & Deeds, 2006). Consequently, it should be important for new ventures to develop and utilize this capability to be able to improve its performance through network relations, especially if the venture is striving for competitiveness and legitimacy (Powell, Koput and Smith-Doerr, 1996; Walter et al., 2006). We thus argue that when new ventures achieve higher levels of NC, they are better equipped to benefit from the competitive advantages obtained from network relations resulting in improved EO. The following hypothesis is thus presented:

\[ H3: \text{The higher the level of NC is in a new venture, the greater its EO will be.} \]

Considering the improvements a new venture’s network relations and its level of NC could have on new venture’s EO, a similar relationship should also be true for firm performance. Bearing in mind that the more NC a venture has the more relationships it should be able to develop and utilize, and consequently, the more opportunities and advantages the venture should attain enhancing firm performance. For these reasons we propose that:

\[ H4: \text{The higher the level of NC is in a new venture, the better its performance will be.} \]

\[ H5: \text{The more network relations a new venture has, the better its performance will be.} \]

However, these performance relationships might not be straight forward, but could be moderated by both internal and external factors since the relations from NC and NS to performance is context specific, just like the relationship between EO and performance is (Lumpkin & Dess, 1996). For example, prior research by Abernethy and Brownell’s (1997) and Perrow’s (1970) has showed that the degree of complexity within a venture’s work task affects its accounting controls resulting in that the best form of control is dependent on task analyzability and number of exceptions. Similarly, it can be argued that new ventures dependency of NC and network relations to perform better could be dependent on the venture’s internal complexity. If a new venture uses unfamiliar methods with a lot of variety within the tasks, it might require a number of partners to accomplish the task and to improve its performance. If on the other hand the internal complexity is low, the venture may be better off alone since network partners could easily “steal” ideas when the tasks are simple. In addition, complex ventures with a number of inter-dependent routines, technologies, individuals, and other firm specific resources linked to a particular knowledge asset, are also assumed to require a higher degree of NC since these assets are more difficult to transfer (Rothaermel & Deeds, 2006) to network partners. Thus:

\[ H6a: \text{The more internal complexity a new venture has, the stronger the relation between NS and performance will be.} \]
H6b: The more internal complexity a new venture has, the stronger the relation between NC and performance will be.

For EO, we believe that internal complexity works the opposite way. Entrepreneurial activities may be more certain to lead to higher performance when the venture is relatively simple (Covin & Slevin, 1991). Thus, when complexity is too high, EO may be more difficult to put into useful action. Therefore:

H6c: The more internal complexity a new venture has, the weaker the relation between EO and performance will be.

Similar to the influence of a new venture’s internal complexity, external complexity can also influence on the venture’s performance. Startups’ collaboration with other firms has been shown to enable the ventures to reach new markets and customers faster (Walter et al., 2006; Cooper, 2002). If a new venture possess external complexity in terms of targeting an immature market, that is satisfying customers’ latent needs which they by themselves not are aware of (cf. Narver et al., 2004), the venture might need more collaboration with diverse partners to accomplish the task. Prior research has also showed that there are differences among firms in their ability to manage inter-organizational relationships (Ireland et al., 2002). Therefore, when a new venture collaborates with other firms in a complex market situation NC may be more valuable. Thus

H7a: The more external complexity a new venture has, the stronger the relation between NC and performance will be.

H7b: The more external complexity a new venture has, the stronger the relation between NS and performance will be.

For the final moderation, when a new venture has a strong external complexity, an entrepreneurial strategy seems to fit very well. By acting more proactively, innovatively and risk-taking new ventures could achieve good results when faced with external complexity. By applying EO a venture can become the first on the market which can result in high returns (Lee et al., 2001, Zahra et al., 1995). Consequently, the following hypothesis is proposed:

H7c: The more external complexity a new venture has, the stronger the relation between EO and performance will be.

**METHOD**

To test the proposed hypotheses a sample of new Swedish firms registered in year 2003 and a turnover of 1 million Swedish krona (SEK)\(^1\) was selected. During the summer 2007, we sent a mailed questionnaire to the owner and/or manager taking part in the start-up of the company, and we received 171 usable replies after three waves, corresponding to a 12 % response rate. Although we would have liked a higher response rate, a non-response analysis (covering size and financial ratios) indicates that the responding firms are similar to non-responding.

We used multiple-item scales to measure network capability (NC) and entrepreneurial orientation (EO) which were partly adopted from previous research, where NC comes from Walter et al. (2006) and EO from Lumpkin & Dess (2001). Besides adopting the four dimensions of NC

\(^1\) 1 SEK = 0,11 Euro
(coordination, relational skills, partner knowledge and internal communication), we added a fifth dimension, named “new relations”, to capture the new venture’s ability to recognize and initiate new business relations. Within the EO construct we chose to use innovativeness, proactiveness and risk-taking since these three dimensions are frequently used in combination to measure entrepreneurial orientation (c.f. Covin & Slevin, 1989, Lumpkin & Dess, 2001, Miller, 1983, and Wiklund, 1999). New venture performance was captured by self-reported items reflecting the internal efficiency and sales performance, and by secondary data on number of employees and turnover. Network structure (NS) was measured by the logged number of the start-up’s network contacts. The new venture’s internal and external complexity was seen as moderating variables affecting the start-up’s EO and performance. Internal complexity was measured as the degree of firm routineness (Abernethy & Brownell, 1997; Perrow, 1970) and external complexity by market maturity aspects, i.e. if the customers are aware of and accept the new ventures offerings (cf. Narver et al., 2004). Finally we controlled for environmental characteristics and firm size which are ordinary control variables in firm performance and EO studies. Based on feed-back from survey pre-tests, all of this study’s items were further adjusted to fit the studied context, see appendix A for detailed presentation of the constructs and items.

The analysis of the study was completed by structural equation modeling using LISREL as software. First, we made a confirmatory analysis to determine whether the dimensions of a new venture’s NC, EO, performance and venture complexity (internal and external) represented distinct constructs. The analysis showed that all variables had good measurement properties (loadings and reliability are presented in appendix A). Then we made a multiple regression analysis and a path model to find out if the proposed hypotheses (i.e. the paths between the constructs generated from theory) were supported, and if so, to what level. The generated model from empirical data fitted the theoretical model to 95 percent, which is a good level of model fit (see table 2 below).

**RESULT AND ANALYSIS**

We calculated the Pearson correlations between network relations (NS), network capability (NC) and entrepreneurial orientation (EO) as well as between the three constructs and new venture performance, environment, firm size and venture complexity. The correlations were statistically significant indicating that NS and NC are related to a new venture’s EO. In addition, a more turbulent and competitive environment is also linked to higher EO, which is in line with prior studies (c.f. Covin & Slevin, 1989; Lumpkin & Dess, 2001, 1996; Wiklund & Shepherd, 2005, 2003).

**Table 1. Correlation matrix and descriptives**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.NC</td>
<td>5.26</td>
<td>1.09</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.EO</td>
<td>3.98</td>
<td>1.52</td>
<td>0.576**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.NS</td>
<td>4.78</td>
<td>2.80</td>
<td>0.279**</td>
<td>0.300 **</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.PERF</td>
<td>0.81</td>
<td>0.88</td>
<td>0.230 *</td>
<td>0.366**</td>
<td>0.227*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.Environment</td>
<td>3.66</td>
<td>1.09</td>
<td>0.368**</td>
<td>0.405**</td>
<td>0.223 **</td>
<td>0.019</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.Turnover</td>
<td>8.38</td>
<td>1.14</td>
<td>0.146</td>
<td>0.209*</td>
<td>0.255**</td>
<td>0.236*</td>
<td>0.129</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.Ext. Complexity</td>
<td>4.33</td>
<td>1.51</td>
<td>0.037</td>
<td>0.221**</td>
<td>0.106</td>
<td>0.148</td>
<td>-0.014</td>
<td>0.060</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8.Int. Complexity</td>
<td>3.05</td>
<td>1.42</td>
<td>0.435**</td>
<td>0.533**</td>
<td>0.289**</td>
<td>0.274**</td>
<td>0.302**</td>
<td>0.135</td>
<td>0.179*</td>
<td>1</td>
</tr>
</tbody>
</table>

p<0.01**; p<0.05*
Regarding venture complexity, the correlation matrix shows significant and positive correlations from both aspects of complexity and EO. In addition, larger firms were also positively correlated with EO, which could be an indication that larger firms have more resources and capabilities to act entrepreneurially.

Moreover, the results in table 1 also indicate that a new venture with more EO, more relations, and with a higher ability to develop and utilize inter-organizational relationships is a higher performing venture. Similarly, internal complexity and size is positively linked to performance. Environmental aspects and external complexity, on the other hand, show little relation to new venture performance.

**Table 2. Structural equation model**

<table>
<thead>
<tr>
<th></th>
<th>EO</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>0.53***</td>
<td>-0.08</td>
</tr>
<tr>
<td>Internal Complexity</td>
<td>0.49***</td>
<td>0.14*</td>
</tr>
<tr>
<td>External Complexity</td>
<td>0.18*</td>
<td>0.11</td>
</tr>
<tr>
<td>Turnover</td>
<td>0.10</td>
<td>0.24**</td>
</tr>
<tr>
<td>NS</td>
<td>0.17***</td>
<td>0.07</td>
</tr>
<tr>
<td>NC</td>
<td>0.53***</td>
<td>0.16</td>
</tr>
<tr>
<td>EO</td>
<td></td>
<td>0.46***</td>
</tr>
</tbody>
</table>

Chi-Square 33.91 df 14, P-value=0.0021, RMSEA=0.092, NFI=0.92, CFI=0.95, GFI= 0.95

p<.01; p<.05**; p<.01***

Next we conducted a multiple regression and a path model in LISREL to test the proposed hypotheses (see table 3). We primarily wanted to investigate the effect of network structure (NS) and network capability (NC) on new ventures’ EO, as well as the effect of all these three constructs on new venture performance. We followed recommendations by Schumacker and Lomax (2004) to interpret the multiple model fit indexes. All indices were in line with the recommended levels ($\chi^2 = 33.91$, df = 14, $p < .01$, RMSEA = .092, NFI = .92, CFI = .95, GFI = .95) showing a good model fit. The results, presented in table 2, show that collaboration with several network relations ($\beta=0.17$, $p<0.01$), and especially high levels of NC ($\beta=0.53$, $p<0.01$) increases a new venture’s EO. These results confirms both the second (H2) and third (H3) hypotheses of NS and NC being facilitative for new ventures’ entrepreneurial strategy. As a result, this study indicates that new ventures should put time and effort in developing diverse network relations, and their capability to initiate and manage these relations in order to use more entrepreneurial strategies.

Network relations (NS) and a venture’s ability to develop and manage these relations (NC) did not have any effect on new venture performance. As a result, hypothesis four (H4) and five (H5) was not supported. EO, in contrast, had a strong influence on performance ($\beta=0.46$, $p<0.01$), supporting our first hypothesis (H1). These results indicate that new ventures should engage more in network relations and developing the capability to manage them in order to carry out a more entrepreneurial strategy, which in turn increases new venture performance, and ultimately firm survival.

Finally, we tested the moderating effect of venture complexity and market maturity on new venture performance. We suggested that the more internal complexity a new venture has, the stronger the link between NS/NC and performance (H6a-b), while more internal complexity was hypothesized to weaken the relationship between EO and performance (H6c). None of these hypotheses were supported. Likewise, all hypotheses indicating a positive moderating effect from external complexity on the link between NC/NS/EO and performance (H7a-c) were not borne
through. Thus, internal and external complexity was not the moderating variable we hypothesized it to be.

**Table 3. Hypothesis testing**

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1</strong>: The higher the new venture’s EO is, the better its performance will be.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>H2</strong>: The more network relations a new venture has, the higher its EO will be.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>H3</strong>: The higher the level of NC is in a new venture, the greater its EO will be.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>H4</strong>: The higher the level of NC is in a new venture, the better its performance will be.</td>
<td>No</td>
</tr>
<tr>
<td><strong>H5</strong>: The more network relations a new venture has, the better its performance will be.</td>
<td>No</td>
</tr>
<tr>
<td><strong>H6a</strong>: The more internal complexity a new venture has, the stronger the relation between NS and performance will be.</td>
<td>No</td>
</tr>
<tr>
<td><strong>H6b</strong>: The more internal complexity a new venture has, the stronger the relation between NC and performance will be.</td>
<td>No</td>
</tr>
<tr>
<td><strong>H6c</strong>: The more internal complexity a new venture has, the weaker the relation between EO and performance will be.</td>
<td>No</td>
</tr>
<tr>
<td><strong>H7a</strong>: The more complex a new venture is the more it will benefit from NS and NC in improving its performance will be.</td>
<td>No</td>
</tr>
<tr>
<td><strong>H7b</strong>: The more complex a new venture is the less it will benefit from EO in improving its performance will be.</td>
<td>No</td>
</tr>
<tr>
<td><strong>H7c</strong>: The more external complexity a new venture has, the stronger the relation between EO and performance will be will be.</td>
<td>No</td>
</tr>
</tbody>
</table>

Instead the results showed a direct effect where internal complexity was strongly related to a new ventures entrepreneurial strategy (β=0.49, p<0.01) and weakly to venture performance (β=0.14, p<0.1). External complexity showed a weak positive effect (β=0.18, p<0.1) on EO, while it was not significantly linked to venture performance. This implies that new ventures that are complex will tend to use more EO and be more competitive, especially if the complexity is internal. Now, you might argue that these results could be an effect of picking the winners in our sampling, or in other words, that we by our selection criteria picked the new ventures being high on complexity. We tested for that possibility by dividing the sample into high and low performers within both internal and external complexity and then run the regression and path model test in LISREL all over again. This analysis did not show any deviating results.

As a result of the analysis, the initial model in figure 1 can be revised as shown in figure 2. There is a positive link between a new venture’s capability of developing and managing multiple relationships and its entrepreneurial strategy. Similarly network relations have a positive effect on new ventures EO. Having an entrepreneurial strategy also enhances new venture performance, and consequently its survival. Venture complexity is not moderating EO or performance, instead both aspects of venture complexity had a positive direct link on EO, and internal venture complexity also affected performance positively.
DISCUSSION AND CONCLUSIONS

In this section we will first discuss our research questions, then our contributions to both theoretical development and practical application, and finally we offer some conclusions and suggestion for further research.

Our overall purpose was to identify how new ventures can enhance their performance, and ultimately their survival. By studying 171 Swedish new ventures we tested if start-ups could improve their competitive performance by using an entrepreneurial strategy (i.e. EO), and enhance their EO by engaging in inter-organizational relationships. The results showed that more network relations and higher capabilities in developing and managing network relationships are enhancing the new ventures use of an entrepreneurial strategy to be competitive. Therefore, a new venture’s network structure (i.e. its collaborative partners) and network capability can be considered as being facilitative means, or tools, to be more entrepreneurial in their competitive strategies. EO then, is showed to improve new venture performance, and thus enhancing the new ventures chances of survival. The moderating effect we hypothesized from venture complexity instead proved to be a direct effect. When a new venture experiences high complexity in its internal and external facets, they tend to have a more developed entrepreneurial strategy (i.e. higher EO). For internal complexity there was also a weak link directly to performance, indicating that those new ventures that have a complex production process perform better. This result is perhaps not so surprising given that complexity often is linked to the sophistication or “newness” of the business idea. Then the link to higher EO is natural – the aspects making up EO (proactiveness, risk taking and innovation) are all easily linked to ventures that are competing with something unique and not commonplace. Given that such an idea survive the first years, it is likely that it will be more successful than more mundane business ideas.

Theoretical contributions

Our contribution to entrepreneurship theory is that we bring in new contextual factors affecting the performance and ultimately firm survival of new ventures. As Lumpkin & Dess
(1996) suggested, we need a contingency perspective emphasizing other constructs than environmental conditions to be able to explain and understand under what conditions new ventures can enhance their EO and performance. This study shows that NS and NC are significant to explain EO over and above the controls we used (size and environmental factors). Another significant contextual factor is venture complexity. Internal venture complexity deals with the degree of routines in ventures’ methods or processes and tasks. The more complex a venture is the higher its EO. External complexity is about how immature the market is. New ventures targeting immature markets are accordingly using higher levels of EO. In addition, since EO is the most significant construct to explain performance, new ventures will be benefited to achieve improved performance by using EO. Our study thus provides additional support for the EO – performance link (c.f. Walter et al., 2006; Wiklund & Shepherd, 2005, 2003; Lumpkin & Dess, 2001).

**Practical implications**

When a nascent entrepreneur is in the position of starting a new company, he or she should make some considerations of the complexity of the venture as well as the wanted customer segment. The more complex the business will be, the more it will require an entrepreneurial strategy. And to be able to use a more entrepreneurial strategy the new venture will be favored by more collaboration with other firms, especially in turbulent and competitive environments. Entrepreneurs should early in their start-up process put time and effort in developing network relations and a capability to initiate and manage relations. As a consequence, the new venture enhances its competitiveness and firm performance. Networking activities should therefore be desirable and available among general new venture support actors, Technological Transfer Offices (TTOs) and incubators to encourage entrepreneurs to collaborate and extend their opportunities early on. Policy makers should accordingly facilitate for networking among start-ups by supporting different network initiatives.

**Limitations and future directions**

This study was based on all Swedish new ventures started during 2003, and a separation between different types of new ventures was not distinguished. However, you might investigate different type of new ventures to find if networks, NC and EO are equally important to the performance in the different type of ventures. For example, university spin-offs (USOs) which often origin from research and innovations, and therefore face an uncertainty whether there is a market for their product, and has a complex process and product development in transforming their technology into products and services (Shane, 2004) might also be defined as a complex new venture in this study. It would thus be interesting to make comparative studies between USOs and new technology-based firms (NTBFs, which also are complex due to the origin and products) to see if the results from this study hold. Moreover, studies of these new ventures’ network structure and function would be interesting. Which of these relations is the most important determinant for new venture performance? Do NTBFs have the need of similar relationships as USOs, or is it contextually dependent? Do these relations facilitate the new ventures’ performance or enhance their EO? Prior research within this area is increasing, but there is still a need of more studies from different aspects to understand a complex phenomenon such as the creation of a USO (Djokovic & Soutiaris, 2008).

**CONTACT:** Sari Roininen, Luleå University of Technology, Department of Business Administration and Social Sciences/Entrepreneurship, SE - 97187 Luleå, Sweden, (T): +46-920-49 28 24, (F): +46-920-49 21 60, E-Mail: Sari.Roininen@ltu.se
REFERENCES


Appendix A. Descriptives, factor loadings, and construct reliability.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Loadings</th>
<th>Alpha</th>
<th>Means</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-taking</td>
<td>In our firm…</td>
<td>.74**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>…we see bold, wide-ranging acts are necessary to achieve the firm’s objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>…we have a strong aptitude for high risk projects (with opportunities for high returns)</td>
<td>.85**</td>
<td>0.84</td>
<td>3.94</td>
<td>1.67</td>
</tr>
<tr>
<td></td>
<td>…we adopt a bold posture when confronted with decisions involving uncertainty, to maximise the exploitation of opportunities</td>
<td>.91**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>… we tend to be ahead of competitors in introducing new products and ideas</td>
<td>.74**</td>
<td>0.89</td>
<td>4.21</td>
<td>1.69</td>
</tr>
<tr>
<td></td>
<td>…we typically initiate actions which competitors then respond to</td>
<td>.84**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>…we are often the first to introduce new products and services, new ways to produce these or new administrative methods</td>
<td>.88**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactiveness</td>
<td>…we have an emphasis on R&amp;D, technological leadership and innovations to achieve the firm’s objectives</td>
<td>.85**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness</td>
<td>…changes in product or service lines have usually been quite dramatic to achieve competitive advantage</td>
<td>.84**</td>
<td>0.89</td>
<td>3.81</td>
<td>2.04</td>
</tr>
<tr>
<td></td>
<td>…one of the main goals is to launch many new lines of products/services in next 3 years</td>
<td>.79**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EO -</td>
<td>Risk-taking</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial orientation</td>
<td>Proactiveness</td>
<td>.89</td>
<td>0.78</td>
<td>3.98</td>
<td>1.52</td>
</tr>
<tr>
<td></td>
<td>Innovativeness</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordination</td>
<td>…we analyze what we would like and desire to achieve with which partner</td>
<td>.78**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>…we develop relations with each partner based on what they can contribute</td>
<td>.58**</td>
<td>0.79</td>
<td>4.90</td>
<td>1.46</td>
</tr>
<tr>
<td></td>
<td>…we discuss regularly with our partners how we can support each other</td>
<td>.81**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relational skills</td>
<td>…we have the ability to build good relationships with business partners</td>
<td>.64**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>…we can deal flexibly with our partners</td>
<td>.78**</td>
<td>0.88</td>
<td>5.72</td>
<td>1.34</td>
</tr>
<tr>
<td></td>
<td>…we almost always solve problems constructively with our partners</td>
<td>.78**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New relations</td>
<td>…we are constantly open to new relations with new partners</td>
<td>.85**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>…we have the ability to initiate a mutual relationship with new partners</td>
<td>.75**</td>
<td>0.90</td>
<td>5.45</td>
<td>1.52</td>
</tr>
<tr>
<td></td>
<td>…. we are alert to finding new partners</td>
<td>.86**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner knowledge</td>
<td>…we know our partners’ markets</td>
<td>.87**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>…we know our partners’ products/procedures/services</td>
<td>.86**</td>
<td>0.90</td>
<td>5.41</td>
<td>1.32</td>
</tr>
<tr>
<td></td>
<td>…we know our partners’ strengths and weaknesses</td>
<td>.88**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construct</td>
<td>Items</td>
<td>Loadings</td>
<td>Alpha</td>
<td>Means</td>
<td>S.D</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>----------</td>
<td>-------</td>
<td>-------</td>
<td>-----</td>
</tr>
<tr>
<td>Internal communication</td>
<td>…we have regular meetings for every project</td>
<td>.67**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>…employees develop informal contacts among themselves</td>
<td>.83**</td>
<td>.71</td>
<td>4.87</td>
<td>1.35</td>
</tr>
<tr>
<td></td>
<td>…managers and employees often give feedback to each other</td>
<td>.78**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NC - Network capability</td>
<td>Coordination</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Relational skills</td>
<td>.87</td>
<td>.84</td>
<td>5.26</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>New relations</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Partner knowledge</td>
<td>.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internal communication</td>
<td>.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NS - Network structure</td>
<td>Log of strategic partners - customers</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Log of strategic partners - suppliers</td>
<td>.75</td>
<td>.40</td>
<td>4.78</td>
<td>2.80</td>
</tr>
<tr>
<td></td>
<td>Log of strategic partners - partners</td>
<td>.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In our firm...</td>
<td>...we have reached an increased sales growth in established markets</td>
<td>.79*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>...we have succeeded with an increased market growth in new markets</td>
<td>.71*</td>
<td>.74</td>
<td>0.89</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>...we have succeeded with establishing competitive products/services</td>
<td>.68*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External performance</td>
<td>...we have succeeded to reach effectiveness in methods and processes (productivity)</td>
<td>.77*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>...we have achieved an ability to develop new products/services</td>
<td>.75*</td>
<td>.78</td>
<td>0.74</td>
<td>0.98</td>
</tr>
<tr>
<td></td>
<td>...we have achieved an ability to attract qualified employees</td>
<td>.69*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>External performance (sales)</td>
<td>.80</td>
<td>.74</td>
<td>0.81</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>Internal performance (efficiency)</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venture complexity (internal)</td>
<td>The company's main work-tasks consist of repetitive activities.</td>
<td>.83**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The company's main work-tasks consist mainly of everyday tasks.</td>
<td>.72**</td>
<td>.81</td>
<td>3.05</td>
<td>1.42</td>
</tr>
<tr>
<td></td>
<td>The company's main work-tasks are accomplished by established procedures and practices.</td>
<td>.88**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venture complexity (external)</td>
<td>To be able to utilise the company's product/service, the customer needs some education in connection to the sales.</td>
<td>.79**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The company's product/service meets undiscovered customer needs.</td>
<td>.72**</td>
<td>.65</td>
<td>4.33</td>
<td>1.51</td>
</tr>
<tr>
<td></td>
<td>The company's main work-tasks require years of experience to be accomplished.</td>
<td>.76**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Likert scale: -3 to +3; **Likert scale: 1-7