With a little help from my friends

A study of the development of social networks of student entrepreneurs over time during and after a venture creation program

M.J. Haring
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ACADEMISCH PROEFSCHRIFT

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Blessed are the meek, for they will inherit the earth (Matthew 5:5).

Some of them want to use you
Some of them want to get used by you
Some of them want to abuse you
Some of them want to be abused.

Sweet dreams are made of this
Who am I to disagree?
I travel the world
And the seven seas
Everybody's looking for something

(Eurythmics, 1983)
Acknowledgements

This dissertation is about connections to other people in all sorts of ways, but especially in an entrepreneurial setting. In this paragraph I will look back at a period of about ten years I worked on this dissertation, but I would like to start this reflection with the person I was connected to by the navel cord, my mother. One of the things I inherited from her is the immense positive look at life and her trust in mankind. She taught me that in principle all human beings are good and have good intentions. Over the years we both learned the hard way that this is not always the case, but I still embrace this basic attitude. This attitude helped me to persevere in my ambition to finish this dissertation. So thank you for this, mother!

When I started to think about writing a dissertation in 2008, it was Mirjam van Praag, at the time professor of entrepreneurship, who inspired me to take the first steps on this long and winding road. This extraordinary woman did not fit the dusty image I had of a scientist at all. She was full of laughter and you could see she enjoyed life to the fullest, but she could also speak about mathematic models I did not understand a word of. At the end of 2009 I managed to produce a research proposal that was given the consent of the university’s assessment committee and my journey could begin.

Because I wanted to study the development of social networks of entrepreneurs I also needed another PhD supervisor with expertise in this area and so I found Tom Elfrink of the Vrije Universiteit Amsterdam (VU) willing to be my co-supervisor. Over the years things changed: Mirjam moved to Copenhagen and Tom became my supervisor. During this period I enjoyed several Christmas dinners at Tom’s home, where he invited his PhD students, and once we almost got stuck in his place because it would not stop snowing. Tom was very important as a motivator and helped me a lot over the years in finding the courage to go on. I am very grateful for the way he coached me in this process because this dissertation would not have seen the light without him!

During the first years it was also very important for me to work together with other PhD students that were coping with the same trials and tribulations. Especially the young and eager students of the VU and the UvA helped me a lot by inspiring me with their energy and brightness. Because my knowledge of statistics was not that good, I especially appreciated the help Sander Hoogendoorn and Laura Rosendahl Huber gave me when I was struggling with getting the data right into Stata (a statistic software program) and making the right mathematical equations. I
also enjoyed seeing them taking their PhD degree over the years with their bright and inspiring dissertations (check out the work of Sander, Laura and Yuval Engel).

Getting my first article published was a milestone that inspired me to persevere and helped me to take the next steps in following the bright students of the Amsterdam University of Applied Sciences (HvA), my subjects of study. In particular I must thank Tom van Bokhoven (Greenclaim), Rebecca van der Wurff (Pleasurements) and Pieter Bosschaart (MrPrezident) for letting me stalk them over time and giving me an insight in their entrepreneurial endeavours. I followed them through highs and lows and they were always so kind to be open about the struggles they had (and still have). Thank you very much for your confidence!

My colleagues of the Amsterdam University of Applied Sciences were also of great importance during the road I travelled over the years. The ones that started with their PhD study and finished it over the years were an inspiration to keep on going. The ones that were still struggling with their dissertation helped me to keep my head up and move on. My direct colleagues of the entrepreneurship minor inspired me by doing their fantastic work with the students! The staff of the university supplied me with time to work on this dissertation and I am grateful they gave me this opportunity. In the end I benefitted from the constructive criticism of my colleague of the Vrije Universiteit Amsterdam (VU), Marco van Gelderen, who helped me to get my second article published. Over the years I also got support from my friend Ger van Beem, who did a bachelor and master study in law in addition to his busy job as an English translator for a law firm. He was an example of perseverance and also helped me to improve the English of this dissertation!

Towards the end and during the whole process, it was my wife Anita who had to cope with all the ups and downs of this struggle and who allowed me to use the kitchen table and the refrigerator as a place for all my sticky notes. She supported me when I had to work at the weekends on my dissertation and when I started to vlog about my endeavours with a selfie stick. She will be happy the process has ended and proud I kept on going till the end!
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Chapter 1 Introduction

1.1 Introduction

While I was writing the introduction to this dissertation (December 2017), a popular book written by Yuval Noah Harari was on the top of the bestseller lists. This book (Homo Sapiens) is about the history of mankind and the way man has developed over time. In this book Yuval Noah Harari starts with writing about the way mankind distinguishes itself from other species. He argues that the most important difference is the possibility of man to organize itself socially and form groups that are organized in a way in which they can defend themselves against the threats from outside. Within this organization, gossip and trust play an important role. The way other people talk about the leaders of the group behind their back, forms one of the important indicators of the wellbeing of the group as a whole. When groups grow to more than 150 members it seems impossible for the leaders to control the gossipping and the moment the group splits into two groups is near. Nowadays one of the most common developments of new groups takes place in the start-up scene, where entrepreneurs form new ideas into businesses and start developing new communities built upon trust and ambition. The way these communities are built and the role of the social network around these communities is a field that is of interest to many scholars and has already led to an impressive body of knowledge. The fact that the social network of entrepreneurs is one of their major assets and that successful entrepreneurs build bridges between earlier disconnected social circles (Schumpeter, 1934; Granovetter, 1973; Burt, 1992) is one of the statements made.

Because starting your own business has become more and more popular by students at bachelor or master level, and universities have developed venture creation programs to guide students through the process of starting their own business (Lackéus et al., 2015; Hulsink et al., 2014), student entrepreneurs have to start with activating their own social network in these cases, and build the social capital of the firm from scratch, often with the help of the network of the university, family and friends. For students in general, research suggests that good contacts (i.e. a high level of social capital) are helpful in obtaining jobs (Burt, 1997), getting promoted (Podolny & Baron, 1997), and having a successful career (Seibert et al., 2001). Students who want to start their own business have to realize that connections to others can be crucial for the success of their endeavour to create a sustainable company. How student entrepreneurs make use of their social network and how they develop it over time in favour of their company has not been given much attention yet (Rasmussen et al., 2015; Lackéus et al., 2015; Lockett et al., 2017). This dissertation aims to extend the knowledge on this issue.
To achieve this objective, I will first discuss the research that has been done lately on the topic of social networks and the issues that were raised in the ongoing debate. I will also refer to the latest discussions about entrepreneurship education stimulating students to become entrepreneurs or more entrepreneurial. In the second part of this chapter I will discuss the exact research questions and contributions of this dissertation. This section will also be about three themes I will discuss and how they are interrelated. Finally I will conclude with a description of the research design and an overview of the empirical chapters in this dissertation.

1.2 Social networks and student entrepreneurs

An evaluation of the six Centres of Entrepreneurship in the Netherlands (Van der Steen et al., 2012) concluded that more and more students are interested in entrepreneurship and starting their own company. This holds in particular for graduates from the Universities of Applied Sciences (UAS). A study by Ecorys (Van der Aa, 2012) found that more students are seeking to gain credits in entrepreneurship (in UAS: 64% in 2012 compared to 50% in 2010). Many Higher Education Institutions (HEIs) are experimenting with forms of entrepreneurship education that include the start-up of an actual new venture by students (Mwasalwiba, 2010; Vanevenhoven & Drago, 2015; Lackéus & Williams-Middleton, 2015).

“The interest for entrepreneurship education has increased immensely over the past decades. It is today viewed as a means for countries to equip their citizens with innovative and entrepreneurial competences, to create supportive learning environments and engaging and innovative teaching methods, to create growth and innovation in established organizations, and to increase the number of innovative and sustainable start-ups.” (Hofer & Baur, 2017; 88). Research has shown that action-based entrepreneurship education in which venture creation programs are intertwined have the potential to be an effective means to reach these outcomes (Lackéus, 2016; Rae et al., 2012; Moberg, 2014). However, action-based approaches utilizing the creation of real-life ventures as formal part of the curriculum are still relatively uncommon. One reason for this is that entrepreneurship education with a substantial practical ingredient, such as venture creation, often contains many unusual, novel, and resource intensive and therefore expensive teaching methods (Mwasalwiba, 2010). Another reason is, for example, creating financial exposure, which has been identified as one of the prerequisites for entrepreneurial learning, could be unethical in a student context and it is debatable whether it would be desirable (Pittaway & Cope, 2007).

Notwithstanding these implications most universities support the creation of start-ups founded to exploit a piece of intellectual property created by research of their academic staff (Shane, 2004).
These so-called ‘university spinoffs’ are a subset of all start-up companies created by students and employees of universities. For these spinoffs, universities often create a Technology Transfer Office (TTO) and an incubator or a science park (Rothaermel et al., 2007). The incubator or science park network is often created to pool resources as well as to provide access to expertise outside the university (Van Burg et al., 2008; Rothaermel et al., 2007). In this respect, people involved in university spinoffs start out with interpersonal networks that are primarily academic in nature; if they do not invest in ties with the industrial and financial world, industry representatives and investors are likely to consider the spinoff as an academic venture rather than a real company (Bekkers et al., 2006; Vohora et al., 2004). Most of the people starting in university spinoffs are academic staff. The companies started through venture creation programs at the university are mostly not based on intellectual property owned by the university, but based on ideas of the students enrolled in the programs. They own the company and have to develop the company's network. These programs are based on voluntary participation and the issue of investing money in the business is taken for granted by the students. These start-ups are often not backed up by a TTO or part of the incubator of the university. This dissertation will contribute to the knowledge about these kinds of start-ups.

In the current study, the unit of analysis is the new venture started by student entrepreneurs and its set of direct and indirect network relations. The student entrepreneur is the student that participates voluntarily in a business creation program with the intention to create a business based upon his own idea or the idea of another student or an external partner. Most of the students have a social network that is hardly developed. They can lean on the social network of their family and friends and sometimes on the business contacts developed during an internship or a temporary job. In the social-network theory we speak of strong ties and weak ties (Granovetter, 1973). In the early phase of the development of a business, strong ties will be rather important because transactions in this phase will be mostly based upon trust as the company has no track record to fall back upon. In this phase connections to unknown individuals with access to resources not yet accessible for the nascent entrepreneur also have to be made and maintained. These weak ties might grow into strong ties over time and improve the chances for building a sustainable business (Newbert et al., 2013; Rasmussen et al., 2015). For the student entrepreneur it is a challenge to build this network with a balance of strong and weak ties. When the company started by the student entrepreneurs evolves, employees will be added to the company and as this studies spreads out over several years the impact of the social capital of the employees on the company’s network will be part of this research.
Nahapiet and Goshal (1998) suggest that there are three specific aspects of social capital: (1) a structural dimension, (2) a relational dimension and (3) a cognitive dimension. Structural social capital refers to the frequency of contact and connectivity levels among individuals’ network relationships, often also referred to as strong or weak ties (Burt, 1997; Burt et al., 2000). Relational social capital refers to the underlying normative conditions that guide an individual actor’s relations and the resulting exchanges (Lin, 2000; Uzzi, 1999). Cognitive social capital refers to language-based resources that provide ‘shared representations, interpretations, and systems of meaning between parties’ (Nahapiet and Ghoshal, 1998: 244). Lee and Jones (2008) suggest on the topic of cognitive social capital: “Policy makers and those directly involved with the provision of entrepreneurial training must pay greater attention to building better communication skills, face-to-face and electronic, among those who have low levels of human capital”.

Entrepreneurs need to go through several phases in the development of their company. All these phases ask for different network needs. In the early stage we speak about the opportunity recognition phase (Shane and Venkataraman, 2000), the phase of obtaining resources (Garnsey, 1998) and the phase of gaining legitimacy (Baum et al, 2000). “The importance of an embedded network of strong ties to secure crucial resources is widely acknowledged” (Elfring and Hulsink, 2003; 420). In the other two phases a mix of strong and weak ties will have the best effect. Newbert et al. (2013), found that the strength of one’s ties is not a static characteristic of the individuals' network, but rather a dynamic one in which weak ties can become strong ties overtime and can be used in a strategic way. Hallen and Eisenhard (2012) argue that entrepreneurs need to form network ties in an efficient way so that they form ties with the right partners. The most efficient entrepreneurs achieve superior ties and network outcomes. Rasmussen et al. (2015) support these findings in their research of university spinoffs, and add to the theory of developing networks that ties formed along the way of developing the companies network can be used to serve other purposes as intended at first encounter. This dissertation will also contribute to literature about the need to develop a diverse network over time and the necessity to transform weak ties into strong ties.

In an extensive review of the literature on networks in entrepreneurial contexts, Stuart & Sorensen (2007) concluded that five mechanisms developed in now classic sociological studies provide the dominant explanation for why networks influence social and economic outcomes of interest. These mechanisms are: information access, brokerage, social status, embeddedness
and sanctions. In this dissertation I will focus on these mechanisms while observing student entrepreneurs during their actions in building their companies over the years.

1.3 Research problem and questions

So far my analysis has concentrated on the increasing interest of students, enrolled in higher education, in starting their own company during college and the specific place they take in the landscape of university spinoffs. For these students it is important to develop a social network as part of their entrepreneurial efforts and several implications of this development were pointed out.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Citation</th>
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<tbody>
<tr>
<td>Newbert et al. (2013:298)</td>
<td>“Although Random Coefficient Modelling accounts for the intra-individual patterns of change over time in computing the parameter estimates (a significant advantage over more traditional statistical methods), we are nevertheless unable to determine how the supporter networks of individual nascent entrepreneurs change over time. Thus, scholarship examining how this phenomenon unfolds at the individual level would complement the present research.”</td>
</tr>
<tr>
<td>Lamine W. et al. (2015:426)</td>
<td>“The first is the importance of close longitudinal analysis, in order to understand what is at stake, what matters in the evolution of the entrepreneurial project. Longitudinal case studies and/or panel studies are really important to delineate the diverse variables and their impact.”</td>
</tr>
<tr>
<td>Stuart and Sorensen (2007:221)</td>
<td>“The earlier discussion about the endowment of new firms with founder networks begs the questions: at what point, and to what end, do we distinguish the networks of early-stage ventures from those of their founders and key recruits, and how should we think about employees’ professional networks that span firm boundaries.”</td>
</tr>
<tr>
<td>Stam, Arzlanian and Elfring (2014:169)</td>
<td>“Second, many primary studies included in this meta-analysis have employed cross-sectional data such that the possibility of reverse causality cannot be ruled out. Future studies should employ longitudinal data to disentangle the causal effects. In addition to addressing causality concerns, this type of research could explore new questions. For instance, what trajectories of network change create most value?”</td>
</tr>
<tr>
<td>Vissa and Bhagavatula (2012:288)</td>
<td>“While research on entrepreneurial networks has accumulated insights on how entrepreneurs’ social connectedness drives success, there is little understanding of how entrepreneurs build and evolve their networks over time and the micro-sociological processes that link networking actions to changes in local network structure.”</td>
</tr>
</tbody>
</table>
Yet as revealed by the quotes in Table 1.1, scholars have recently noted that our understanding of the way entrepreneurial networks change over time is still limited and therefore the urgency for longitudinal research on this topic is still relevant. Also the way employees contribute to this changing network of the firm still remains limited (Stuart and Sorensen, 2007). Anderson and Jack (2002) discovered that social capital formation consists of different phases, such as meeting each other, searching for similarities, searching for common ground and looking for future possibilities. In a university setting, with students involved in an entrepreneurial firm and relying on a small sample, Lee and Jones (2008) discovered the importance of micro-processes such as active questioning, interpreting information and the use of “social niceness” (small talk, making jokes) for the formation of social capital. Entrepreneurs who are keener to apply these kinds of micro-processes seem to gain in their social capital. In their study, Lee and Jones (2008) also point out the difference in the use of e-mail correspondence between higher and lower educated entrepreneurs. In an era where the use of social media like Facebook, LinkedIn and Instagram are gaining importance for business communication, this also could be a factor where nowadays student entrepreneurs could distinguish themselves from non-digital native entrepreneurs.

Several authors also pointed out that even if some of the information and knowledge can be learned through education, much of the necessary information about exploiting opportunities and coping with the liabilities of newness can only be learned by doing (Cope & Watts, 2000; Rae, 2000; Shane, 2003). “To be as fully prepared as possible for entrepreneurship, individuals
must look outward in order to interact with and learn about the wider environment and recognize fully the opportunities that confront them." (Cope, 2005: 379).

Cope (2005: 380) goes on to argue that the content of entrepreneurial learning has five dimensions: learning about oneself, learning about the business, learning about the environment and networks, learning about small business management, learning about the nature and management of relationships. The final dimension, which is 'an integral part of the other four elements', is the focus of this dissertation. The ability to extend personal relationships by bridging new networks is a crucial entrepreneurial skill (Larson and Starr, 1993). Based upon the above, the research problem of this dissertation is defined as:

*How do student entrepreneurs develop their network over time in favour of the new ventures they create and how do they motivate their employees to use their social capital in favour of the company they work in?*

Based on this research problem, I formulated three research questions that form the basis for this dissertation. The initial question is about the influence of a network of a business consultant upon the development of the network of the company of student entrepreneurs (based upon the theory about structural holes). The second question is based on the development of the network of student entrepreneurs over a period of time and the way in which they are able to bind unknown external parties to the company. The third question is about the way the (former) student entrepreneurs motivate their employees to use their social network in favour of the firm. The steps the student entrepreneurs take, in order to form the network of their company, lead over time to a network based on ties with clients, suppliers, employees and other stakeholders. Figure 1.1 shows the way how these themes are integrated in this dissertation. The specific research questions of each chapter will be discussed in the next paragraphs.
Theme 1 (chapter 2): The influence of structural holes on the performance of student start-ups

When a social network is not connected directly to another social network we speak of a structural hole, a separation between non-redundant contacts. The hole is a buffer like an insulator in an electric circuit. As a result of the hole between them, two contacts provide network benefits that are to some degree additive rather than overlapping (Burt, 1992: 353). It appears that new ventures that occupy structurally advantageous network positions by bridging structural holes within the larger business community have privileged access to external resources, benefit from entrepreneurial learning, identify more business opportunities and enjoy higher reputations (Stam, 2008).

I expected that the student entrepreneurs at the start of their endeavour often missed the right contacts in the specific industry they were going to operate in. To get in contact with the right people they could be introduced to these contacts by family and friends or by people from the university's network. This mechanism of introducing people to other contacts is also called brokerage in the network literature (e.g. Stuart & Sorensen, 2007; Vissa, 2012). The introduction of the student entrepreneurs to unknown industry contacts might hypothetically speed up the
process of development of the new ventures. To test this hypothesis during the venture creation program the student entrepreneurs were involved in, I started an experiment in which I introduced a business consultant with a network of specialists on financial, marketing and business development to a part of the student population and denied the rest of the group access to this network. With this experiment I wanted to find out if student entrepreneurs could benefit from a network that was unknown to them but that could give them access to resources they otherwise would not easily get access to. Therefore my first research question is:

Research question 1: Does the introduction to a network with specialists, unknown to the students, give student entrepreneurs advantages in developing their business in comparison to students who are not introduced to this network?

In chapter 2 of this dissertation this research question is addressed by reflecting on the results of this experiment and the effect it had on the development of ideas and businesses of the nascent entrepreneurs under scrutiny. In this chapter I also look into the entrepreneurial skills and competencies of the student entrepreneurs and map different network variables like: tie strength, network density, network constraint, network size and number of ties. I also take into account several performance measures of the nascent firms and draw conclusions on the effect of the network I confronted the students with on the performance of their company.

Theme 2: the development of a company's network over time by student entrepreneurs

Lans et al. (2015:470) recently noted that “what remains challenging in studies such as these (concerning university students in an entrepreneurial program) is the reliance on cross-sectional, instead of longitudinal, and self-perceived data. More longitudinal data, for instance following these students over a longer period of time, also after graduation, might provide additional insights into the complex relationships between social competence, social capital and entrepreneurial performance.” In this dissertation a light is shed on this process of development by following the development of several student start-ups over a period of three, five or more years (also after graduation). I followed students with comparable networks and monitored how they developed their network over time by reaching out to their family, friends and business contacts. I wanted to find out what kind of mechanisms play a role in this development. Information access, brokerage, status, embeddedness and sanctions are examples of the mechanisms under scrutiny (mentioned by Stuart & Sorensen, 2007, as the most essential mechanisms that influence social and economic outcomes of interest).
To get access to information an amount of trust is required. According to Hite (2005), trust can be classified at three levels: (1) ‘social trust’ based on sharing useful information with third parties; (2) ‘personal goodwill trust’ based on close bonds developed with someone useful for the business; and (3) ‘economic trust’ based on business necessity when completing important but infrequent transactions. As the status of a student with an idea or a nascent business is not that high immediately, the lack of initial trust can be overcome by, for example, representatives of the university who introduce the student entrepreneur to their network. In this case the mechanism of brokerage can be put in position and can help the student entrepreneur to the right resources. For example, it is not unusual for informal investors to note that they do not even evaluate unsolicited business plans (Stuart and Sorenson, 2007). Rather, the only plans that receive any attention are those referred by members of their networks. Sometimes these members are university professors. During the start-up phase, homogeneous ‘identity-based’ ties that are embedded in the entrepreneur’s pre-existing social relationships predominate. It is well established in the entrepreneurial literature that being embedded in a network of strong ties is important in the early stages of a business start-up, but can restrict the capacity for growth in the longer term (Larson and Starr, 1993). A gradual evolution to ‘calculative networks’ in which ties are based on purpose and function is necessary over time (Hite and Westerly, 2001). This possible embeddedness of the student entrepreneur in his own network of strong ties and the network of the university leads to the second question of this dissertation:

Research question 2: How do student entrepreneurs develop their social network over time in order to grow their start-up into a sustainable business?

In chapter 3 this research question is addressed by reflecting upon the data gathered within a period of several years among several student entrepreneurs by means of surveys, personal interviews, attending meetings where they had to present their business to the public and publications in the press. I build upon the idea that these inexperienced student entrepreneurs face severe legitimacy problems and argue that they therefore benefit from the brokerage of the university representatives and also profit from the goodwill they get from established parties by playing their “student card”. I also take into account how these students handle the liability of starting a new firm in which they also have to learn about the nature and management of relationships. Especially the formation and retaining of new relationships (weak ties) have my full attention.

Theme 3: The network of the entrepreneurial firm and the role of employees’ social capital
Over time student entrepreneurs who develop their business hire employees and these employees also bring their social capital into the business. While one’s social capital is not a collective good belonging to the company somebody is working for, this social capital of an employee has to be activated in order to be of use for the company. Interesting in this case is to find out how (former) student entrepreneurs relate to this problem and find ways to stimulate their employees to use their social capital in favour of the company. Stuart and Sorensen (2007) asked the question: “At what point, and to what end, do we distinguish the network of early-stage ventures from those of their founders and key recruits, and how should we think about employees’ professional networks that span firm boundaries?”

Entrepreneurial firms mostly have limited resources, cannot provide high salaries, job security, or fixed career opportunities (Barrett & Mayson, 2008; De Geest et al., 2015; Leung, 2003). Their success and survival probability are dependent not only on the market situation, entrepreneurs’ experiences, knowledge, and behaviour but also on employees’ performance (Barrett & Mayson, 2008; Hayton, 2003; Rauch & Hatak, 2016). Especially in young and small firms, each individual usually contributes to performance and success (Tharenou, Saks & Moore, 2007; Van Yperen & Hagedoorn, 2003).

Most of the research on social capital has been done in large firms with many employees, my research refers to companies in the development stage with only a small number of employees (20-80 persons). Leana and Van Buren (1999) posit two components of interest in building organizational social capital: (1) associability (willingness of network members to subordinate individual interests for the good of the collective) and (2) trust (willingness of members to be vulnerable). These two components are used for my research to find out how (former) student entrepreneurs find ways to commit their employees to their company in such a way that they are willing to use their social capital in favour of the organization. This raises the third research question:

Research question 3: How do (former) student entrepreneurs convince their employees to use their social network in favour of the company?

This research question is addressed in chapter 4 of this dissertation. I build on recent work in the HRM, entrepreneurship and social network literature that has shown the importance of building trust and associability for the performance of employees (Leana & van Buuren, 1999; De Geest et al., 2015) by proposing that student entrepreneurs need to win over the trust of their employees in order to make them use their social capital in favour of the firm and in this
way expand the firm's social network. I examine if employees make use of their online social network (Facebook, LinkedIn, etc.) for finding new employees for the firm and if they make use of social networks built in a past occupation or built by participating in political organizations or, for example, charity organizations like the Lions Club.

1.4 Research Contributions
This dissertation contributes to three bodies of literature and is based upon a unique data set developed over time in the years 2010 till 2018 (See Table 1.2).

Firstly, this study contributes to the social network research concerning entrepreneurial networks by doing a longitudinal study on the evolution of personal and firm networks of student entrepreneurs to find out how they reach out to unknown business ties in order to shape a sustainable organization. Although previous research has examined the role of the composition of a network with strong and weak ties and the way changes in the composition of the social network influence the building of sustainable business (Newbert et al., 2013; Rasmussen et al., 2015), few studies have followed how the network of a nascent business develops over time (Stuart & Sorensen, 2007). By doing so I was also able to determine the moments when the tipping points appeared and some companies disappeared from the market and others became sustainable businesses. By analysing these moments I could explain why these start-ups survived or not and the role of the social network in these cases.

Secondly, this study contributes to the theory of the influence of structural holes upon the success of a start-up (Burt, 1992) by performing a unique experiment within the population of companies started by student entrepreneurs. An experienced business consultant, with specific ties in the financial, marketing and business world, was confronted with student entrepreneurs that started their businesses during a venture creation program and connected them to specialists in his network in order to help them develop their company. Other companies of this group were not introduced to this business consultant in order to find out if it made any difference to the development of these companies.
Table 1.2
the unique data set belonging to this dissertation

<table>
<thead>
<tr>
<th>Problem</th>
<th>Dataset</th>
<th>What can be demonstrated by the data?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the role of the entrepreneurial competencies and background of students in the process of developing a heterogeneous social network for their business?</td>
<td>Survey data of 495 students involved in a venture creation program (2009-2011). Interview data of 165 student start-ups involved in a venture creation program (2009-2011).</td>
<td>With this data set it is possible to analyse if there are differences in the student population based upon competencies and background. Team composition, data about success of start-up, network composition after 20 weeks working in a start-up.</td>
</tr>
<tr>
<td>What is the influence of external specialists on the success of a student start-up?</td>
<td>Interview data of 17 student start-ups over a period of three years (2010-2014).</td>
<td>The development of the social network and the development of the company.</td>
</tr>
<tr>
<td>How do student entrepreneurs develop their social network?</td>
<td>Interview data of 9 employees and 3 business owners about development of trust and deployment of social capital (2017).</td>
<td>These data can give insights in how entrepreneurs develop trust and motivate employees to use their social network in favour of the company.</td>
</tr>
<tr>
<td>How do (former) student entrepreneurs stimulate their employees to use their social network in favour of the company?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thirdly, this study contributes to the literature on entrepreneurship education, while following a specific group of young entrepreneurs being part of a venture creation program supported by the university. Because the companies were started and owned by the students and not depending on intellectual property owned by the university and action-based approaches utilizing the creation of real-life ventures as formal part of the curriculum are still relatively uncommon, this research also contributes to the literature of this field in development (Lackéus, 2016; Rae et al., 2012; Moberg, 2014). The complications of combining running a business and completing a bachelor education at a university of applied science is also a topic of reflection during this dissertation.

Fourthly, this study contributes to the research concerning entrepreneurial networks by adding insights into the contribution of the social capital of employees to the network of the entrepreneurial business. Specifically the role of nascent (former student) entrepreneurs in motivating their employees to contribute their social capital to the social network of the firm is a subject that has not got much attention yet (Stuart & Sorensen, 2007). By interviewing several employees and business owners, a unique insight is given into how employees use their social network in favour of the company they work for.
1.5 Research approach

The current study employed a multimethod longitudinal research design with a multiple case inductive study (Eisenhard, 1989) in order to address the research problem and questions that were formulated in section 1.3 of this chapter. The longitudinal research method was chosen in order to fill the gap in the literature that exists in doing longitudinal studies on the development of the social network of entrepreneurs (Stuart & Sorensen, 2007). During the study three unique data sets were developed on which I based my conclusions (see Table 1.2).

The research approach of the present study can be divided into three stages. In stage one, I reviewed the literature on social networks, entrepreneurship and entrepreneurship education, in order to evaluate the state of prior research. This analysis facilitated the identification of important theoretical constructs and relationships and the recognition of unanswered research questions. The analysis indicated the presence of a rather well-established body of research including previously developed constructs and measures. It also showed some underdeveloped parts of the theory at hand and opened the way for a hypothesis-testing approach. Insight into the field of entrepreneurship education while being an experienced developer of venture creation programs helped me to formulate the proper research questions and gave me access to the proper study material.

The second stage of the research project involved the development of a survey instrument, the collection of quantitative data, and the analysis of data using regression methods and analysing the data with a specific program used for network analyses (Ucinet). For the analyses of the competencies of the students I could use a formerly developed survey that had been used to measure the entrepreneurial competencies of students in an entrepreneurial program (Oosterbeek et al., 2010). I added a couple of specific questions to it so it would fit the purposes of this research. I also used a questionnaire developed by Davidsson and Honig (2003) with a predesigned topic list in order to map the development of the company on topics like sales, turnover, employees, etc. To find out about the network development of the student companies over time I used a topic list developed by Bhagavatula et al., 2010. For the last part of this research project I developed a qualitative interview frame in order to find out how entrepreneurs develop trust within their company and make their employees use their social capital for the benefit of the company. For each case the involvement of employees' social networks in favour of the company was analysed and the role the student entrepreneurs played in stimulating this behaviour. According to the replication logic (Eisenhardt, 1989) comparisons across the various
cases were made. For future research, propositions were reformulated into testable hypotheses for a larger sample of start-ups.

The final stage of the research project entailed interpreting the main empirical findings. To generate a better understanding of the study’s results, I not only relied on theory and previous empirical findings reported in the literature, but also on feedback from entrepreneurs that participated in the research. In doing so surprising results could be discussed as well as their practical implications for, for example, entrepreneurship education at universities of applied sciences.

My unit of analysis in this study is the emerging venture started by student entrepreneurs. They were third and fourth year bachelor students of all faculties of universities of applied sciences who voluntarily participated in a six-month venture creation program for 30 ECTS. They were allowed to put together their own teams of up to four students and were assessed on the basis of their entrepreneurial activities. They worked at a special place at the university and were supervised by experienced entrepreneurs. All started companies were registered with the Chamber of Commerce. Because the interest of students over the years has grown to consider a career as an entrepreneur as an alternative for a career at an established company and the offering of educational programs that stimulate venture creation also has increased (Lackéus, 2016) it seems to be appropriate to find out if this new batch of entrepreneurs faces other problems than their counterparts starting their companies with a background of former employment, knowledge of the industry, an established network and maybe some management experience (Burton et al., 2002).

1.6 Chapter overview
The experiment reported in chapter 2 of this dissertation was conducted in the academic years 2009-2010 and 2010-2011. The total number of students in those years was 495 and the total number of companies started was 165, giving an average team size of 3 students. The total number of students were subject to a survey about their entrepreneurial competencies and background. In June 2012, 17 companies were still active. In the first article, 135 companies were analysed. This study was based upon a mix of quantitative and qualitative methods. In this chapter the question is answered about the impact of a specific network of specialists in the field of finance, marketing and business development on the results of a nascent student company. Will these specialists make the difference in this phase of the development of a company started during a venture creation program at the university? This unique experiment showed that in this phase of development the company started by students cannot make optimum use of
the offered network because a large percentage of the students is not sure if they will continue with their company in the long run as they also want to finish their bachelor education. This makes it hard for the specialists they encounter to commit themselves to the companies started by these students. The outcome of this research suggests that a university that offers a venture creation program in a certain phase of a bachelor program should also consider what kind of help they can offer students during their studies when they want to continue their company after a venture creation program. It also shows that certain conditions have to be met if students want to benefit from a network of people from the business world that they have not previously met.

Chapter 3 deals with the 17 companies that were still active after the venture creation program. These companies were followed until the end of 2017 and during that time only 7 of the original 17 companies were still operating. These 17 active companies were questioned with an interval of a year about the development of their company and their network using the same questionnaires as mentioned before. A qualitative approach was used, collecting data from a variety of sources. This was done in order to facilitate the triangulation of evidence obtained from different methods and sources (Eisenhardt, 1989). During the development of their company over time the entrepreneurs were also followed and observed when appearing in public to promote their company or to take part in an election. Several of the entrepreneurs under scrutiny won the title of student entrepreneur of the year. Also their appearances in the press were collected to build their cases.

This research shows that it is hard for students to connect to business ties they are not yet acquainted with. They mostly rely on their family and friends to start up their business during the venture creation program. The students that manage to reach out to new business contacts (if necessary, with the help of the universities’ networks) are the ones that also show commitment to their business and are able to continue their business after the venture creation program. Although the university sometimes offers to be a launching customer of some of the student start-ups, this only helps the students in the short term. In the long term the entrepreneurs have to reach out to other industry connections and if they do not succeed in this, the end of the contract with the university also means the end of the company.

In 2017, three student companies with more than 20 employees were selected to be an example of the way student entrepreneurs were able to motivate their employees to activate their social capital in favour of the company. This part of the study can be found in chapter 4 and was conducted through interviews with founders (each company one founder) and employees (three per company, in total 385 minutes of interviews), and analysis of company
HRM policies, internal memos about strategy sessions and the websites and social media sites of the companies. These sources made it possible to triangulate my findings to build stronger interpretations (Yin, 1984; Zott & Huy, 2007). A qualitative approach was used.

Chapter 4 discusses the way (former) student entrepreneurs, of the selected companies, are able to stimulate their employees to use their social network in favour of their company. The content of this chapter shows how most employees are fully committed to their start-up and employer. The digital social networks are a source of information for the employees, they use these networks in favour of the company especially when the start-up is in need of new employees. Also the former business network of employees can be a source of information or an introduction to new clients or employees. These networks are especially useful for employees in account manager functions. One conclusion from this research is that entrepreneurial firms could benefit more from the network of their employees if they implemented strategies that stimulated their employees to deliberately use their social capital in favour of the company.

Chapter 5 brings together the findings of the separate researches and gives suggestions for further research on this topic, in particular for adjustments in the educational system to make it easier for student entrepreneurs to work on their company while finishing their education.
1.7 Related publications, papers in conference proceedings

**Chapter 2**

**Chapter 3**

**Chapter 4**
Chapter 2 The influence of support from a network with structural holes on the performance of student start-ups

Abstract
This paper analyses the influence of the support from the environment in which students live and work on the success of student start-ups. A unique experiment was conducted, in which one group of students was confronted with a network of external specialists and the other group was not confronted with this network. This experiment dealt with the endogeneity problem that is often related with social networks, because this time part of the network was externally delivered to the start-ups involved in the experiment. Strong ties and weak ties could also be measured to find out which ties were more important during the early stage of a start-up. In network literature the importance of structural holes plays a role in the judgement of the success of start-ups. This influence could be measured during this period of time.

The experiment took place during a minor program, for the period of six months, at the Amsterdam University of Applied Sciences. During the period of two years, data were collected about the characteristics of the students involved in the start-ups, the composition of the start-up team and the way their network had developed during this period.

This experiment delivered data from which we could conclude that students in more traditional markets profited more from a dense network than from a network with structural holes in the first six months after starting their businesses. Students that started in less developed markets seemed to need more structural holes in the start-up phase. In both cases there was no evidence that a network with structural holes contributed to a higher performance of start-ups in their first six months. The data pointed in the direction that in the first six months of the start-up phase in traditional industries in developed countries a network of strong ties contributes the most to the success of a start-up of student entrepreneurs.

The analyses of the data also delivered some recommendations for universities involved in the guidance of student start-ups. One of the main points for external partners to disconnect from the student start-ups was that most students were not fully committed. They mentioned in conversations with third parties that they probably had to continue their studies after six months. This was a barrier for these potential investors to get involved. Our recommendation is that universities with the ambition to contribute to the economic development of their countries through student start-ups should also invest in the preconditions that enable students to
continue their businesses during college. Therefore there should be a possibility for students to graduate from university as a shareholder of a promising business!

2.1 Introduction

In the entrepreneurial network literature there is no consensus at the moment about the configuration of the network of a new firm. While some have argued that cohesive strong ties contribute to the success of a new firm (e.g. Hite and Hesterley, 2001), others seem to be in favour of weak-ties networks at the early stage of firm development (Elfring and Hulsink, 2007). A systematic analysis of the optimal configuration of entrepreneurs' social capital in the early firm stage is therefore a territory that needs more specific investigation.

Social networks can be shaped at random or intendedly. In the first case the entrepreneur depends on luck and in the second case an entrepreneur seeks for connections with specific persons or companies. In the case of the organization and coordination of resources, social activity and social interactions are required. The start of a new enterprise means that existing social relationships have to be activated and new ones created (Bruderl and Preisendorfer, 1998, Elfring and Hulsink, 2007). Different social networks can be connected to one another. One of the vehicles of this connection can be entrepreneurship: entrepreneurship is building bridges between previously disconnected social circles (Burt, 1992, Schumpeter, 1934).

Concerning this last topic some research has been done. It seems to be obvious that an entrepreneur has ties or is developing ties in the industry he is working in, but he also needs to have extra-industry links with, for example, informal investors, educational curricula and the media, to allow him to demonstrate his congruence with existing norms and practices, thereby facilitating access to valuable resources that support growth and survival of the new founded enterprise (Zimmerman and Zeitz, 2002). The development of ties to different social networks is one of the aspects of entrepreneurial behaviour and helps by the developing of the critical processes a new venture has to deal with. This development also creates an endogeneity problem while dealing with conclusions drawn from network research. In most literature, networks are considered to be exogenous and not influenced by variables like the social and human capital of the founders of the new firm (Stuart and Sorensen, 2007).

When a social network is not connected directly to another social network we speak of a structural hole, a separation between non-redundant contacts. The hole is a buffer like an insulator in an electric circuit. As a result of the hole between them, two contacts provide network benefits that are in some degree additive rather than overlapping (Burt, 1992). It appears that new ventures that occupy structurally advantageous network positions by bridging
structural holes within the larger business community have privileged access to external resources, benefit from entrepreneurial learning, identify more business opportunities and enjoy higher reputations (Stam, 2008).

To address the issues stated before, we decided to conduct a unique experiment within the group of several student start-ups involved in a minor program entrepreneurship at the Amsterdam University of Applied Sciences. Part of the group was introduced to a network with specialists from different industries and the other part was not introduced to this network. With this experiment we wanted to answer the question if the introduction to a social network with structural holes influences the results of a start-up in its early stage. We also wanted to address the endogeneity problem and were able to measure the effect of strong and weak ties on the success of new firms.

In our experiment 105 start-ups were included, of which 17 are still in business at this moment. The results of the experiment do not show that the performance of the treatment group was significantly better than that of the control group.

The rest of this paper is structured as follows: section 2 gives more details about the design and context of the field experiment, section 3 describes the data and reports results of the analyses made. Section 4 presents the empirical findings and, finally, section 5 discusses the findings and draws conclusions.

2.1 Context

The start-ups that we studied were all started during a minor program in Entrepreneurship at the Amsterdam University of Applied Sciences. Students from all schools of the universities of applied sciences in the Netherlands are allowed to choose this program and follow it for a period of six months. The Amsterdam University of Applied Sciences is divided into seven schools: the School of Design and Communication, the School of Economics and Management, the School of Education, the School of Health Professions, the School of Social Work and Law, the School of Sports and Nutrition and the School of Technology. 60 percent of the participants in the program were students in the School of Economics and Management, as shown in Figure 2.1.
The students had to start their own company in groups of two to four students. In exceptional cases students were allowed to start their business on their own. This was most often allowed if they already had a business partner from outside the university. The activities of the minor program were located off the university campus within a business centre with all kinds of small, creative companies. Students could use this place as their dedicated work space. In the first two weeks of the minor program we focused on concept development by means of brainstorm sessions and on group formation. Students were advised to form teams with complementary skills. In this period they also developed a start-up document in which they formulated their business model, their target for the first half year and the deliverables at the end of the period. A coach was also assigned to each group. The coaches were specialized in, for example, sales, marketing, law or international business. All the coaches that were involved in the minor program had had their own businesses or were still active in their own company.
Over the next sixteen weeks, the students started to shape their start-ups. They registered with the Chamber of Commerce, they developed a website, if necessary they developed a prototype, they might have imported a product, they gathered the resources to start their business, they visited network meetings, sold their products/services, took care of free publicity, etc. During this period the students were obliged to follow classes on the subjects of marketing, finance, sales, business writing, giving elevator pitches, using the business canvas (Osterwalder, 2010), debating, intellectual properties, law and taxes. They also spent an entire week making a commercial, teaser or viral for their company, and during that process they were guided by professional filmmakers. During the course we invited entrepreneurs to share their stories with the students, organized a debate about entrepreneurship and showed the commercials to a professional jury at an Oscar-like awards ceremony. The course ended with an elevator pitch competition involving the ten best start-ups before a jury of informal investors in which they could win a prize. The students were rewarded for their efforts with 30 ECTS-credits after an assessment about the goals they had achieved.

After the course the students had the possibility to do their internship within their own firm for a period of six months. In this period they were guided by a coach from the minor program. A special program with master classes, peer reviews and consulting had been developed for these students. The experiment reported in this paper was conducted in the academic years 2009-2010 and 2010-2011. The total number of students in those years was 495 and the total number of companies started was 165, giving an average team size of 3 students. In June 2012, 17 companies were still active. In this article, 135 companies were analysed.

<table>
<thead>
<tr>
<th>Academic year</th>
<th>Number of companies</th>
<th>Still active in June 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-9-2009 – 1-2-2010</td>
<td>44</td>
<td>7</td>
</tr>
<tr>
<td>1-2-2010 – 1-7-2010</td>
<td>32</td>
<td>3</td>
</tr>
<tr>
<td>1-9-2010 – 1-2-2011</td>
<td>54</td>
<td>3</td>
</tr>
<tr>
<td>1-2-2011 – 1-7-2011</td>
<td>35</td>
<td>4</td>
</tr>
</tbody>
</table>

2.2 Design

Once the students had formed their teams, the treatment group received an e-mail in week four. In this e-mail the people from the network of specialists were introduced and their contact details were given to the students. In week eight the teams from the treatment group were invited for a consult with a business consultant from the network. He spoke to every team personally and advised about their concept and introduced them to possible clients or other
business partners. In that way, the treatment group gained potential access to a network of specialists that could help their business move forward. Within this network the students could find help in areas such as product development, production, launching customers and investments. The students of the control group were not introduced to that network. The experts from the network were not informed that they were part of an experiment. They were asked if the students were allowed to contact them for help. The coaches of the students were not informed as to whether their team belonged to the treatment group or control group. The groups were randomly assigned to the treatment group by means of a randomizer. In week sixteen the entire group of students were interviewed about their respective networks.

Data

2.3 Variables

In the first week of their minor program the students had to fill out a survey with questions about individual characteristics such as age, education, work experience and family background. Their average age was approximately twenty-three years, all students had work experience and worked on average fourteen hours a week when they were interviewed and over 35% had a father or mother who is or was an entrepreneur.

The baseline survey also included questions to measure entrepreneurial skills like market awareness, creativity and flexibility. Market awareness is the ability of the entrepreneur to sympathize with the needs of his (potential) target group and to anticipate on the behaviour of his customers and competitors. Creativity is the ability to adopt views from different perspectives and to turn problems into new opportunities. Flexibility is the ability to adapt. Successful entrepreneurs react to changes they observe in their environment, such as new needs of clients or new competitors in their market (Oosterbeek, van Praag and IJsselstein, 2010). Moreover, the survey included statements that are combined through factor analysis into measures of entrepreneurial traits such as the need for autonomy, persistence, risk taking, self-efficacy and social orientation. These traits are supposed to be constant over time and possibly influential for entrepreneurial decisions and outcomes (Parker and van Praag, 2010, Oosterbeek et al., 2010).

In the last week of their minor program the students had to fill out a survey with questions concerning the development of the team and the processes that took place in the team. Questions related to processes within the team translated into measures of group potency, decision making, mutual monitoring and coordination, credibility and specialization (Hoogendoorn et al., 2011).
The test items were statements and respondents indicated using a 7-point scale for the extent to which they agreed with each statement. The statements loaded into several factors (with Cronbach alpha’s ranging from 0.6 to 0.88) that can be used as determinants of successful entrepreneurship and of team development, see Table 2.2.

Table 2.2
Cronbach Alpha’s reading of test items

<table>
<thead>
<tr>
<th>Variables</th>
<th>Questions</th>
<th>C α</th>
<th>Variables</th>
<th>Questions</th>
<th>C α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entr. Skills</strong></td>
<td></td>
<td></td>
<td><strong>Entr. Traits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creativity</td>
<td>4</td>
<td>0.85</td>
<td>N. for autonomy</td>
<td>4</td>
<td>0.67</td>
</tr>
<tr>
<td>Flexibility</td>
<td>4</td>
<td>0.71</td>
<td>N. for achievement</td>
<td>4</td>
<td>0.68</td>
</tr>
<tr>
<td>Market awareness</td>
<td>4</td>
<td>0.6</td>
<td>Group coordination</td>
<td>3</td>
<td>0.88</td>
</tr>
<tr>
<td><strong>Team processes</strong></td>
<td></td>
<td></td>
<td><strong>Group processes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endurance</td>
<td>4</td>
<td>0.8</td>
<td>Group potency</td>
<td>3</td>
<td>0.83</td>
</tr>
<tr>
<td>Risk taking</td>
<td>4</td>
<td>0.8</td>
<td>Group specialization</td>
<td>3</td>
<td>0.67</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>4</td>
<td>0.71</td>
<td>Group credibility</td>
<td>3</td>
<td>0.67</td>
</tr>
<tr>
<td>Soc. orientation</td>
<td>4</td>
<td>0.76</td>
<td>Team monitoring</td>
<td>3</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Decision-making</td>
<td>3</td>
<td>0.61</td>
</tr>
</tbody>
</table>

The start-ups were all randomly assigned to the treatment and control group. To be sure that there were no significant differences, before the treatment, in the skills, traits and group processes we compared the groups on these variables by using a two sample mean comparison test, which showed that all aspects were equally divided over the two groups, as shown in Table 2.3.

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1 Examples of the statements are: “I can motivate other people”, “Other people say I am creative”, “I like to take risks” and “I always persevere until I’ve reached my target”.

35
At the end of the semester all groups were interviewed about the results they produced and the people and companies that were involved in bringing the start-up to the stage that it was in at that moment. The interview was about their turnover, costs and profit, but also about being registered with the Chamber of Commerce, patenting, financing, marketing activities, employees and the continuation of the business (Davidsson and Honig 2003). The students were also interviewed about the development of their network. They had to answer questions about the start-ups’ most important contacts until that moment in the areas of finance, marketing, legal issues, distribution and sales. The frequency of the contact to them, the person who introduced the contact to the start-up, their relation to the person who introduced the contact, which contacts knew each other and the importance to the start-up were also recorded, according to the format used by Bhagavatula et al. (2010).

In this study we treat the networks of the start-ups as ‘ego networks’. Ego is the person, in this case the start-up, whose network is solicited, while the alters are his contacts. The instrument used to map the network of the start-up is called a “name generator” (Bailey and Marsden,
1999). We asked the student to give us the names of the people who were the most significant in helping them to reach their goals during the minor. Research has shown that the issues important to start-ups are: obtaining legitimacy, initiating ties with stakeholders (potential customers, investors, manufacturers, etc.) and obtaining and recombining resources (product development, obtaining inputs and initiating marketing and promotion) (Delmar and Shane, 2004, Elfring and Hulsink, 2003). We therefore asked the students who helped them in those areas. In line with Marsden (1993), we used three types of name interpreter items: 1) the attributes of the alters, such as their position within an organization and who introduces the alter to the start-up; 2) the dyadic features of the relationship between ego and alter, for instance the intensity, duration and importance; 3) the characteristics of the relationships between the various alters (family, friend, relative or business contact).

So what is the definition of this social network we are talking about? According to, among others, Laumann (Laumann et al., 1978) it is a set of nodes (persons, organizations) linked by a set of social relationships (friendships, transfer of funds, overlapping memberships) of a specified type. The types we are talking about in the network literature can be the strong ties or weak ties as defined by Granovetter (1983). Where strong ties can be pointed out as relatives, friends and, for example, neighbours and weak ties can be described as acquaintances or friends of friends. The criteria used are: the frequency of contact, the emotional intensity of the relationship, the degree of intimacy, and reciprocal commitments between the actors involved.

The network variables we used in this study were network size, network density, average tie strength and network constraint. Network size, which was added as a control variable, is the total number of alters (either weak or strong) to which a start-up is connected. It is measured simply by counting the unique relationships of the start-up (referred to as alters). Network density is the total number of relationships between the start-up and his unique alters, divided by the total number of potential ties that are theoretically possible between a start-up and his alters (Burt 1978). The density gives information on how cohesive and homogeneous the network is as a whole. The higher the density, the more connected the actors of the network are to each other.

To measure the average tie strength, the duration of the relation until the time of questioning, the frequency of meetings (daily, weekly, monthly, etc.) and the intimacy (family, friend or acquaintance) of each start-up’s alter were coded to create a dichotomous variable for each of the specific topics. These outcomes were subsequently added to create an indicator for the strength of the tie. The average tie strength of all alters is measured by adding the value of the
tie strength of all the alters and dividing the result by the number of alters of a particular start-up (Bhagavatula et al., 2010).

Network constraint indicates the extent to which a start-up is constrained by the structure of the network involving his alters (Burt, 2000). The lower its value, the more structural holes the start-up's network contains. In Burt's terms, the fewer the number of ties between an ego's contacts, the more advantageous is the ego's network. A network with a lot of structural holes gives the ego (in this case the start-up) in the centre of the network the advantage of gaining information before the information reaches others in his network. This advantage makes it possible for the start-up to react to developments in the market before others. Because of this advantage the start-up gains trust within his network of his clients and other stakeholders (like investors, for example). The network results of the interviews are shown in Table 2.4.

<table>
<thead>
<tr>
<th>Table 2.4</th>
<th>Descriptive statistics of network variables after 20 weeks of the minor program entrepreneurship</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=135</td>
<td>Mean</td>
</tr>
<tr>
<td>Average tie strength</td>
<td>1.72</td>
</tr>
<tr>
<td>Network constraint</td>
<td>0.27</td>
</tr>
<tr>
<td>Network size</td>
<td>7.0</td>
</tr>
<tr>
<td>Network density</td>
<td>0.13</td>
</tr>
<tr>
<td>Number of ties</td>
<td>19.4</td>
</tr>
</tbody>
</table>

2.4 Results

Table 2.4 shows the network results of the total population of this research. When we divided the total results into the treatment and control group we concluded that there are no significant differences between these groups (also controlled by two sample mean comparison tests). We had expected a difference in the results, in particular in the case of network constraint. The constraint of the treatment group should have been smaller if the start-ups from this group had profited optimally from the network with structural holes (the independent variable), but the data showed that the constraint was of the same size as the start-ups of the control group. These data are shown in Table 2.4a. The column of the treatment and control group shows the mean values after 20 weeks of being a start-up and their Standard Deviation, the column named “Diff(T-C)” shows the difference between both means and the column named “SE” shows the Standard Error of the difference.
Table 2.4a
Two sample mean comparison test between treatment- and control group

<table>
<thead>
<tr>
<th>Variables</th>
<th>Treatment</th>
<th>N</th>
<th>Control</th>
<th>N</th>
<th>Diff(T-C)</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average tie</td>
<td>1.7</td>
<td>0.49</td>
<td>1.73</td>
<td>0.54</td>
<td>-0.03</td>
<td>0.09</td>
</tr>
<tr>
<td>strength</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network constraint</td>
<td>0.26</td>
<td>0.180</td>
<td>0.28</td>
<td>0.14</td>
<td>-0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>Network size</td>
<td>7.2</td>
<td>3.00</td>
<td>6.8</td>
<td>2.96</td>
<td>0.4</td>
<td>0.51</td>
</tr>
<tr>
<td>Network Density</td>
<td>0.13</td>
<td>0.19</td>
<td>0.12</td>
<td>0.16</td>
<td>0.01</td>
<td>0.03</td>
</tr>
<tr>
<td>Number of ties</td>
<td>19.7</td>
<td>12.3</td>
<td>19.19</td>
<td>11.8</td>
<td>0.51</td>
<td>2.08</td>
</tr>
</tbody>
</table>

Table 2.5 shows descriptive statistics of three performance measures based on the interviews with 135 teams. The average turnover amounted to 1,058 euros, with a standard deviation of 2,475 euros. After 20 weeks, 82 teams ran a loss and 53 teams made a profit (before taxes). A two sample mean comparison test showed no significant difference between the treatment and control group (Table 2.5a). In Table 2.5a we also compared the development stage (devstage) of the start-ups and we used a scale of 1-5 in which 1=idea stage, 2=prototype, 3=tested by clients, 4=In production and 5=Sold on the market.

Table 2.5
Descriptive statistics of dependent variables after 20 weeks of the minor program

<table>
<thead>
<tr>
<th>Variables</th>
<th>N=135</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>1050</td>
<td>2467</td>
<td>0</td>
<td>18000</td>
<td></td>
</tr>
<tr>
<td>Costs</td>
<td>1104</td>
<td>1944</td>
<td>0</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>Profit</td>
<td>-53</td>
<td>1766</td>
<td>-7000</td>
<td>10400</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.5a
Two-sample t test shows no significant difference between treatment- and control group

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Treatment</th>
<th>N</th>
<th>Control</th>
<th>Diff(T-C)</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
</tr>
<tr>
<td>Turnover</td>
<td>68</td>
<td>1215</td>
<td>2826</td>
<td>67</td>
<td>884</td>
<td>331</td>
</tr>
<tr>
<td>Costs</td>
<td>68</td>
<td>1026</td>
<td>2149</td>
<td>67</td>
<td>1182</td>
<td>-156</td>
</tr>
<tr>
<td>Profit</td>
<td>68</td>
<td>189</td>
<td>1910</td>
<td>67</td>
<td>-299</td>
<td>488</td>
</tr>
<tr>
<td>Devstage</td>
<td>68</td>
<td>4.35</td>
<td>1.19</td>
<td>65</td>
<td>4.17</td>
<td>0.18</td>
</tr>
</tbody>
</table>

We also compared the constraint of the network within the different branches the start-ups were acting in (Table 2.6). In this case there was a difference at a 10% level between the mean of the teams in the service/trade branch and the one of the teams involved in product development. This points in the same direction as the difference in tie strength between these groups. A start-
up involved in product development needs more weak ties and also more structural holes to bridge the gap in knowledge between the student's start-up and the market.

<table>
<thead>
<tr>
<th>Table 2.6</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Difference of constraint in service and trade branch compared to product development branch significant at a 10% level</em></td>
</tr>
<tr>
<td>Constraint</td>
</tr>
<tr>
<td>1=service (62)</td>
</tr>
<tr>
<td>2=trade (58)</td>
</tr>
</tbody>
</table>

As stated earlier, the support from someone’s environment plays a role in the success of a student start-up. One of the variables measuring the support from the network is the strength of the ties involved in the network of a start-up. We measured the average tie strength of the start-ups in their first half year and regressed it with the turnover of the start-up in that period. The outcome of the regression showed that there was a clear correlation (at 95% level) between the average tie strength and the height of the turnover. If the average tie strength increases by 0.1 point the turnover increases by 98 euros. The adjusted R-square is 4% so the effect is rather small. It seems to point in the direction that a dense network contributes to the growth of the turnover of student start-ups in their early start-up phase.

**Figure 2.2**

*Scatterplot of the regression of turnover (transformed into natural log value) and average tie strength*

This correlation might be related to the fact that many of the student start-ups were operating in a consumer market and were able to sell their product to family and friends. Therefore, the closer the ties, the more committed the people in the start-up’s network were promoting the
start-up among their friends and relatives. The students started businesses in the service industry providing catering, organizing events, offering personal training or help with tax returns, and so on. Within the trade industry they started businesses to sell fashion items like clothing, bags, laptop sleeves and jewellery. The products that they developed included items for the gadget market, bicycle accessories or healthcare related items (e.g. a special massage table). The average tie strength for the start-ups that developed new products was lower than that of the other groups of start-ups (see Table 2.7), so there were more weak ties in those networks. Because of the complexity of product development those groups might have been forced to look for contacts beyond family and friends.

<table>
<thead>
<tr>
<th>Table 2.7</th>
<th>Average tie strength in various branches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average tie strength</td>
</tr>
<tr>
<td>1=service (62)</td>
<td>1.77</td>
</tr>
<tr>
<td>2=trade (58)</td>
<td>1.68</td>
</tr>
<tr>
<td>3=prod.dev. (15)</td>
<td>1.66</td>
</tr>
</tbody>
</table>

During the network interview, 89 out of 105 start-ups (85%) mentioned their coach as an important contact for the development of their businesses. In this period they met their coach every week for a consult of one hour. On a scale of one to seven the contribution of their coach was appreciated on average with 5.7. The students interviewed mentioned their coaches help with the group process, product development, planning and motivation most often. The treatment group mentioned the help of one of the people of the external network eight times (52 start-ups). Therefore 15% of the start-ups actually said that they benefited from the external network. They met with these external contacts one to four times during the minor program. They judged the contribution of these people on average with 4.1 on a scale of 7. Only in one case the contact with the external network led to a long term relationship in which one of our students actually started a business partnership with somebody from the external network. On average the contribution of the external network was therefore appreciated far less than the help of the coach from the minor program. The fact that a large group of students (60%) were not sure whether they would continue their business due to study obligations might be one of the factors that made it hard for the people in the external network to commit to these start-ups.

I also analysed all control variables (entrepreneurial skills, entrepreneurial traits, team processes) and dependent variables (social network, turnover, profit and development stage) that I mentioned before in a correlation table (Table 2.8). From this table I can conclude that especially the team processes had a positive impact on the turnover and profit of the student
start-ups in their first half year. The average tie strength is positively connected to the development stage of the student start-up. This points in the direction that the stronger the ties, the more developed a student start-up can be in the first six months of its development. The results of the correlation table also show that some of the entrepreneurial skills and traits are negatively correlated with the development of the profit of the student start-up in the first six months.

2.5 Conclusion, discussion and recommendations

The results of the research on the effect of the support that students receive from the environment in which they live and work and the influence of that support on the results of the start-up they begin lead us to conclude that friends and family play an important role in the first phase of a start-up in traditional branches like services and trade. This is in line with the conclusions drawn in earlier research done on this topic (Edelmann et al., 2016, Elfring and Hulsink, 2007; Bruderl and Preisendorfer, 1998; Renzulli, Aldrich and Moody, 2000). In more uncertain markets such as product development, on the other hand, the results of the research suggest that a network with weak ties and more structural holes is important. This also is in line with research done on this topic (Renzulli et al., 2000; Rowley, Behrens and Krackhardt, 2000).

The experiment with the introduction of a network with structural holes to a group of student start-ups showed no significant differences in the results made by the different groups of students. The introduction did not guarantee that the students made use of the network, or that there was a follow-up after becoming acquainted with members from the network. This result seems to point in the direction that there is no advantage in having a network with structural holes in the early start-up phase. The fact that a large group of students were not sure if they could combine their business with their studies made it hard for the members of the external network to commit themselves to this group.

The students pointed out in the interviews that the influence of their coach during the process of starting up their business was important. In particular the support with respect to motivation, product development, group processes and planning was important. This therefore supports the conclusions of earlier research (Ruda et al. 2009). The coaches involved in the minor program all had their experiences in starting businesses on their own, which might have contributed to the appreciation of the students and can be a recommendation for educators involved in developing curricula on this subject.
The fact that the students were committed full time to the start-up during the entrepreneurship minor, contributes to the external validity of the results of this study. Confronted with real time challenges and the fact that they were still in a situation where they had to finish their bachelor’s degree, however, made it sometimes hard to commit to the start-up and to make the necessary offers, including financial ones, to bring the start-up to the next level. This also could be taken into account by educators that aim at helping students with creating their own companies.

If universities really want to contribute to the economic development of their country by stimulating students to start up their own businesses, they should also consider to take the right measures to make this happen. A six-month course in which the students can get an idea of entrepreneurship, seems to be a step in the right direction, but if no thoughts are given to the follow-up, then the output could be considered to be just a minor contribution. This study shows that of the 165 start-ups only 17 are still surviving after two years. A 14% score seems to be a score to be satisfied with, but with the right precautions the score might have been higher. I challenge the university to make entrepreneurship a more important goal within the education system so that by making use of custom-made solutions we can deliver more students with a finished university education and the title of CEO of their own business. Doing so we might get rid of the myth that the most successful entrepreneurs are drop-outs in the educational system.
<table>
<thead>
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<th>Social network</th>
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<th>SD</th>
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<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>1.10</td>
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<td>2.20</td>
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<td>0.59</td>
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<td>4.40</td>
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<td>0.17*</td>
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<td>0.19</td>
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</tr>
</tbody>
</table>

Scan QRcode for a closer look at table 2.8

**Abbreviations:** Two-step cluster analysis; network size; average number of ties; mean number of same-sex friends; social self-efficacy. Effects were plotted in social network size for power, power, social need for autonomy, need for achievement, coordination within the group, special responsibility within the group, team monitoring within the team, decision making within the team, dosage-related stage of the study.
Chapter 3 The development of student entrepreneurs' social network over time

Abstract
Recent studies have focused on which networks would help entrepreneurs to become successful and what would be the best mix of strong ties and weak ties to build an organization upon. With this longitudinal research we add insights into the process of network development on an individual level and complement earlier research on this topic.

This article explores the development of strong and weak ties in the social network of student entrepreneurs and the role five mechanisms of social networking play in the process of opportunity recognition, resource mobilization and gaining legitimacy, through a longitudinal case study among 17 student start-ups in the period 2009-2013.

All student entrepreneurs started their businesses in the last two years of their bachelor education as part of a venture creation program. They were interviewed directly after they had started their businesses and their activities were monitored while they were developing their businesses and networks over a period of three years.

This study adds to the current social network literature by analysing how student entrepreneurs use social networking while being involved in the entrepreneurial process of starting a business and especially make use of the advantages of being a student, i.e. being part of the network and having access to the resources of the university. Successful student entrepreneurs distinguish themselves from others by keeping on adding valuable connections to their network, by not being afraid to ask for help and by profiting from the goodwill in the business world towards student entrepreneurs.

This article can be of use for both academics and practitioners.

3.1. Introduction
As starting your own business has become more and more popular by students at bachelor or master level, and universities have developed venture creation programs to guide students through the process of starting their own business (Lackéus M. & Williams Middleton K., 2015; Hulsink & Koek, 2014), student entrepreneurs have to start with activating their own social network in these cases, and build the social capital of the firm from scratch, often with the help of the network of the university, family and friends (Edelman et al., 2016, Rasmussen et al., 2015). For students in general, research suggests that good contacts (i.e. a high level of social
capital) are helpful in obtaining jobs (Burt, 1997), getting promoted (Podolny & Baron, 1997), and having a successful career (Seibert et al., 2001). Students who want to start their own business have to realize that connections to others can be crucial for the success of their endeavour to create a sustainable company. How student entrepreneurs make use of their social network and how they develop it over time in favour of their company is still underexplored (Lackéus M. and Williams Middleton K., 2015; Lee & Jones, 2008). This article aims to contribute to fill this gap in the literature about student entrepreneurship and social networks by making the student company started during a venture creation program and continued afterwards the unit of analysis.

Most studies about entrepreneurial networks rely on cross-sectional data and do not deal with the how and why issues of the development of a network (Stuart and Sorenson, 2007; Stam, et al., 2014; Engel et al., 2017; Lans et al., 2015; Lamine et al., 2015). These studies generate static information, about something that is, in fact, a highly dynamic process (Newbert et al., 2013). In the early stage of venture development three processes are defined that are of great importance: the discovery of opportunities, the acquiring of resources and the obtaining of legitimacy (Elfring & Hulsink, 2003). During these processes entrepreneurs make use of their family, friends and business contacts to reach their goals (Newbert et al., 2013). These so-called 'strong and weak ties' play different roles in these processes (Burt, 2000). The mechanisms involved in these processes are also important for the answer to the question how networks develop over time. In 2007 Stuart and Sorensen found (based on extensive literature research) five essential mechanisms that influence social and economic outcomes of interest: information access, brokerage, status, embeddedness and sanctions. Our proposed conceptual model (Figure 3.1) accentuates how student entrepreneurs use these mechanisms in order to discover opportunities, get access to new resources and gain legitimacy by using strong ties and adding weak ties to their social network.
There are three aspects to the proposed model. First of all we focus on the network of the entrepreneurs under scrutiny. In this case we deal with student entrepreneurs (aged 20-25) with a personal network that needs to be developed and in most cases consists of strong ties of family and friends. This social network needs to be activated and new social relationships need to be created (Elfring and Hulsink, 2007; Bruderl and Preisendorfer, 1998; Sarasvathy, 2001) in order to link to customers, investors, suppliers, prospects or representatives of the media, for example. We therefore define the network in this case as: \textit{the main business relationships with respect to legitimacy, sales, supply, outsourcing and cooperation} (Schutjens and Stam, 2003).

We map this network at the beginning of our research and keep track of it during the period we follow the student entrepreneurs.

Secondly we monitor how the network of the student entrepreneurs develops by using the mechanisms of information access and brokerage in the opportunity recognition phase and later on the mechanisms of status, embeddedness and sanctions in the resource mobilization phase to actually build a business and gaining legitimacy (the most prominently used mechanisms in these phases, according to Stuart & Sorensen, 2007). We especially monitor the steps students take to reach out to the resource providers they are searching for and the role of the university in these cases. How does it help students to be part of the environment of the university when they develop their business?

Thirdly we want to find out what ties they added (or deleted) during the process of developing their business, how they were introduced to these contacts and what resources (clients, money,
expertise, etc.) these contacts brought to the company. We repeat this exercise every year during a period of three years. By doing so we want to answer the research question: How do student entrepreneurs gain initial entry to established networks by using social mechanisms that play a role in different stages of the entrepreneurial process, and how do they develop their network over time by using strong and weak ties?

In order to gain insights into the way student entrepreneurs develop their network we set up a qualitative inquiry. As part of this inquiry we followed 17 student start-ups and the evolution of their network over a period of three years. The student start-ups we followed were all service related businesses and were started during a venture creation program by bachelor students in their third or fourth year. These cases provided empirical material from which we have developed a number of propositions concerning the role mechanisms of social networking play in getting access to new information, clients and other resources to develop a new company. We will answer the research question and also try to find out if there are certain advantages or disadvantages to be a student while actually starting a company.

This article is structured as follows. In section 2, we present current network approaches and former research on start-up networks. On the basis of this literature, expectations about the development of the network of the nascent entrepreneurs are formulated that are tested empirically. Section 3 focuses on the context and methodology. Section 4 is about the cases and the dataset, we present 17 cases of student entrepreneurs who continued their businesses after their graduation. All the start-ups are Dutch companies. These cases provide empirical material from which a number of propositions are developed concerning the way student entrepreneurs develop and make use of their social network (section 5). Finally we will draw our conclusions and give suggestions for further research.

3.2 Developing a social network

The presupposition of this paper is that student entrepreneurs have a rudimentarily developed social network consisting of family and friends and a single business relation obtained by an internship or a side job. So as there is a great amount of uncertainty when starting a business, it is important for the student entrepreneur to lean in the beginning on close relations like family and friends, the so-called ‘strong ties’ (Edelman et al., 2016, Hite and Hesterley, 2001). People to whom somebody is emotionally attached tend to provide access to their resources often below market rates (Witt, 2004). For this reason, evidence suggests that nascent entrepreneurs will seek out individuals with whom they have a strong emotional attachment for various forms of support during the emergence phase (Renzulli et al., 2000; Ruef et al., 2003). When the start-
up evolves over time, relationships with former unknown parties need to be developed to get access to investors, new information and new clients. This is a challenge for student entrepreneurs. The fact that the students are introduced to other entrepreneurs, mentors and students from other faculties helps them to expand their network (Lockett et al., 2017, Rasmussen et al, 2015). Variation of strong and weak ties in a network also gives significant better performance for start-ups (Baum et al., 2000; Newbert et al., 2013). This variety can improve the social network, so if the network initially consists of mostly strong ties of family and friends, it can be expanded with weak ties in a way that they become strong ties over time and the network consists of a mix of strong ties, weak ties and weak ties becoming strong ties (Newbert et al., 2013). While arguing that there are multiple paths to success, it must be said that there is a likely path to failure when the nascent entrepreneur is unable to diversify his network and sticks to a homogenized network over time. He will not be able to acquire the resources critical to an organization's success (Newbert et al., 2013). When entrepreneurs build their social network, social mechanisms (like information access, brokerage, status, embeddedness and sanctions) play an important role in the entrepreneurial process of opportunity identification, resource mobilization and gaining legitimacy (Stuart and Sorenson, 2007; Hoang and Antoncic, 2003). For (student) entrepreneurs it is important to use these mechanisms to expand their network. What can be said of these mechanisms?

3.2.1 Access to information

Research in rural surrounding occupied with specific industries show that strong ties are the most important for businesses to survive and prosper (Jack et al., 2008). According to Jack et al., the multiplexity of ties seems to be decisive for businesses to get hold of the resources needed to develop. This means that entrepreneurs become involved with each other through events that are not directly connected to their businesses, e.g. local committees or non-political service organizations like the Lions club. The exchange of high-quality information becomes the major network function (Jensen, 2002). In these cases an entrepreneur needs to invest time in developing strong ties in the local business community, otherwise his business will fail. In general, strong ties are built upon trust and can be used for the transfer of fine-grained information, tacit knowledge and joint problem solving (Uzzi, 1996; Rowley et al., 2000). Weak ties, on the other hand, often bring in new knowledge and give the entrepreneur the opportunity to develop into an operational organization (Elfring and Hulsing, 2007; Newbert et al., 2013).
3.2.2 Brokerage

Entrepreneurs can be introduced to new partners by their strong ties (brokerage). The referral of a founder to potential funding sources by a venture advocate, for example, is critical networking behaviour for start-ups. It is not unusual for venture capitalists to note that they do not even evaluate unsolicited business plans (Stuart and Sorenson, 2007). Rather, the only plans that receive any attention are those referred by members of their networks. Sometimes these members are university professors. Occasionally, these advocates may provide limited interest-free loans or other seeding to help a venture move from one stage to another (Stuart and Sorenson, 2007). This reliance on referral-based searches has been pointed out in literature already (Vissa & Bhagavatula, 2012), especially regarding the principals of effectuation and affordable loss (Sarasvathy, 2001). Scholars also argue that social capital itself is a critical conversion factor toward developing entrepreneurial capability and sometimes powerful connections are needed for (student) entrepreneurs to benefit from specific resources (Wakkee et al., 2017).

3.2.3 Status

A great deal of uncertainty surrounds nascent entrepreneurs, in particular when they do not have a former track record, resource providers find it difficult to assess the quality of the venture or the idea. It has already been proven that founders from entrepreneurially prominent prior employers, who start a new firm, attract more external financing for their ventures (Burton et al., 2002).

By frequently interacting with their surroundings, nascent entrepreneurs can involve their supporters in their activities and build trust about the activities they are developing. This helps resource providers to make decisions about backing up start-ups (Hallen & Eisenhardt, 2012). By conveying the entrepreneur's personal credibility, professional organizing, organizational achievement and the quality of stakeholder relationships, start-ups are able to gain resources more easily (Zott & Huy, 2007). Personal credibility can be shown by somebody's education and what he or she has achieved until now. Professional organizing is harder to show when a company is in its early stage but when a start-up can show awards and prizes won in competitions it also contributes to their credibility. The relation with already established firms or entrepreneurs who are stakeholders is also one of the symbols that can convince other parties to share resources with a student entrepreneur (Zott & Huy, 2007).
3.2.4 Embeddedness and sanctions
As already stated in the paragraph on brokerage it can be important to have friends or acquaintances who can introduce start-ups to business partners that can be of interest for them because of having resources the start-ups need. In these cases personal relations and business relations often develop alongside economic exchanges and trust and feelings of obligations toward trading partners develop. As a consequence, transgressing the terms of an embedded economic exchange can become tantamount to cheating a friend (Granovetter, 1985), with the implication that narrow conceptions of self-interest cannot explain conduct in these contexts (Stuart and Sorensen, 2007).

Venture capitalists seem to prefer to invest in fledgling firms they learn of through referrals by close contacts, including entrepreneurs they have previously sponsored, fellow venture capitalists, family members, and other professional contacts (Shane and Stuart, 2002). Because information about actors' conduct in previous transactions diffuses through the connections in a network, actors will know of the past behaviour of the other members of the network within their information spheres, and they will have the power to sanction their transaction partners by disseminating negative information about them in the event of malfeasant behaviour (Granovetter, 1985, Raub and Weesie, 1990). As a nascent entrepreneur it could be necessary and beneficial to leverage ties to supporters with whom there have been exchanges in the past, but it would be wise to avoid relying on a small number of supporters for the majority of resources to avoid a kind of dependency on them (Newbert et al., 2013). So the medal of embeddedness has two sides entrepreneurs need to be aware of.

Based upon the several mechanisms and processes, we developed a conceptual model (Figure 3.1) that accentuates the way the mechanisms of social networking influence discovering new opportunities, gaining legitimacy and getting access to other resources. By using these mechanisms the network of the entrepreneur changes. The way an entrepreneur uses these mechanisms is also decisive for the continuance of the company in the making.

3.3 Context and methodology
The fact that it has become more popular among students to start a business during their bachelor or master study and universities are developing programs to stimulate entrepreneurial competencies (Alsaaty et al., 2014; Harkema & Schout, 2008; Rasmussen et al., 2015) is one of the reasons why we decided to follow this group. The fact that they all had comparable social networks that needed to be developed was another reason. During the academic years 2009-
2010 and 2010-2011, we followed 165 companies that had started during a six-month venture creation program (30 ECTS) in the third or fourth year of the bachelor phase (Table 3.1). In this paragraph we will picture the context of this research and show the methods we used to answer the research question about the development of the networks of these young entrepreneurs.

<table>
<thead>
<tr>
<th>Academic year</th>
<th>Companies started (165)</th>
<th>Still active six months after the course (17)</th>
<th>Still active in December 2013 (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-9-2009 – 1-2-2010</td>
<td>44</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>1-2-2010 – 1-7-2010</td>
<td>32</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>1-9-2010 – 1-2-2011</td>
<td>54</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>1-2-2011 – 1-7-2011</td>
<td>35</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

During the 20-week venture creation program the bachelor students start searching for a concept they could develop and bring to the market (Opportunity Recognition). The first four weeks are spent on market research and building a team that has the right qualities to do the job. After that the start-up team, made up of one to four students, registers with the Chamber of Commerce in the Netherlands and works on developing the product or service they have chosen (Resource Mobilization). Every team has a dedicated coach that meets the team on a weekly basis to talk about the developments. After they developed their concept/product they started selling it and worked on their marketing and publicity (Gaining Legitimacy, building status). During the program, workshops were given to the students in which they could develop entrepreneurial skills like sales, marketing and networking. Also classes about legal aspects, financing and human resources were part of the program.

After 20 weeks the students were assessed on their progress and were rewarded (or not) with 30 ECTS for their bachelor study of applied sciences. We followed a group of 17 student entrepreneurs that continued their business after the venture creation program. The 17 companies that continued after the venture creation program are listed below (Table 3.2).
### Table 3.2 Information about the 17 start-ups followed during this research.

<table>
<thead>
<tr>
<th>Name (start company)</th>
<th>Sector</th>
<th>Team composition (m=male, f=female)</th>
<th>Performance (turnover/employees 2013)</th>
<th>Status in December 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fans (Jan 2010)</td>
<td>Hospitality-leisure</td>
<td>1m</td>
<td>0/0</td>
<td>Stopped</td>
</tr>
<tr>
<td>Taxi (Jan 2010)</td>
<td>Hospitality-leisure</td>
<td>1m</td>
<td>50k-100k/3</td>
<td>Still active</td>
</tr>
<tr>
<td>Rappers (Sep 2011)</td>
<td>Entertainment-media</td>
<td>1m</td>
<td>0k-5k/0</td>
<td>Stopped</td>
</tr>
<tr>
<td>Sites (Sep 2010)</td>
<td>Entertainment-media</td>
<td>1m</td>
<td>10k-50k/0</td>
<td>Still active</td>
</tr>
<tr>
<td>Massage (Jan 2011)</td>
<td>Hospitality-leisure</td>
<td>2m</td>
<td>0k-5k/0</td>
<td>Stopped</td>
</tr>
<tr>
<td>Claim (Jan 2011)</td>
<td>Financial services</td>
<td>3m</td>
<td>250k-500k/10</td>
<td>Still active</td>
</tr>
<tr>
<td>Presentation (Sep 2011)</td>
<td>Entertainment-media</td>
<td>2m</td>
<td>250k-500k/12</td>
<td>Still active</td>
</tr>
<tr>
<td>Bags (Sep 2011)</td>
<td>Retail-consumer</td>
<td>2m 1f</td>
<td>0k-5k/0</td>
<td>Stopped</td>
</tr>
<tr>
<td>Furniture (Jan 2010)</td>
<td>Retail-consumer</td>
<td>1m</td>
<td>0k-5k/0</td>
<td>Stopped</td>
</tr>
<tr>
<td>Lenses (Jan. 2010)</td>
<td>Retail-consumer</td>
<td>1m</td>
<td>10k-50k/0</td>
<td>Still active</td>
</tr>
<tr>
<td>Lingerie (Jan 2010)</td>
<td>Retail-consumer</td>
<td>1f</td>
<td>100k-250k/2</td>
<td>Still active</td>
</tr>
<tr>
<td>Catering (Jan 2010)</td>
<td>Hospitality-leisure</td>
<td>1m</td>
<td>0/0</td>
<td>Stopped</td>
</tr>
</tbody>
</table>
During the three-year period when we interviewed the start-ups, 10 out of the 17 start-ups quit their business within three years. In the period we interviewed the 10 start-ups that quit within a period of three years their network did not develop by adding weak ties or in some cases even diminished (Table 3.3). They used their network of families and friends, but did not reach out to other contacts, or were not able to consolidate these contacts.

3.3.1 Interviews
The qualitative nature of the research question prompted us to conduct a multiple case deductive study (Eisenhard, 1989) on several companies started by bachelor students. At the end of the venture creation program the owners of all companies that followed the program (165 over a period of two years) were interviewed about the results they produced and the people and companies that were involved in bringing the start-up to the stage that it was in at the time. The interviews were conducted, following a predesigned topic list (appendix 2), about their turnover, sales, costs and profit, but also about being registered with the Chamber of Commerce, patenting, financing, marketing activities, employees and the continuation of the business (according to a model of Davidsson and Honig, 2003). The interviews were immediately processed in an Excel sheet and a Google docs form. The 165 interviews were held by the author and a student assistant. The interviews lasted between 30 and 45 minutes. Out of these data we could draw conclusions about the development of the social network of the student entrepreneurs during the venture creation program. Because we wanted to see the development of the social network over a longer period of time, we followed the student entrepreneurs of the 17 companies that continued after the venture creation program.
We conducted follow-up interviews on these 17 student companies. The same predesigned topic list was used (appendix 3) and the data were processed on the spot. We also asked questions about the development of their network (appendix 3). A couple of the interviews were recorded, the data of the other interviews were collected by note-taking. These interviews lasted between 30 to 45 minutes. The student start-ups we followed were service-oriented businesses. Data were also collected by checking information from their websites, press releases and publications in the media. We also attended meetings where student entrepreneurs presented their company to win awards. We looked at the networking mechanisms that were involved in the entrepreneurial process the students had activated over the years. This meant that we analysed the interviews by looking into the role of information access, brokerage, status, embeddedness and sanctions as part of the process of opportunity recognition, finding resources and gaining legitimacy (Elfring and Hulsink, 2003, Stuart and Sorenson, 2007), to get a better understanding of the way student entrepreneurs developed their social network over time. The interviews were interpreted and appropriate quotes of the student were matched with the specific mechanism they related to and the process the company was in at that time (opportunity recognition, finding resources or gaining legitimacy), to support our findings.

The start-ups that continued after the venture creation program, were interviewed once a year till January 2014 (in 10 of the cases interviews were stopped at an earlier stage, because the student entrepreneurs quit their business). At this time (January 2014) only seven of the start-ups originally followed were still active.

3.3.2 Short description of the seven companies that survived

Taxi

The owner of this company is running a taxi service without having his own cars. He drives managers around in their own cars. He has a partner in his firm, who joined two years after the start of the company. To value the worth of the company at that time, the owner of Taxi was able to use the help of a lawyer and an accountant out of the network of his clients. The owner's father is an important factor by introducing the student entrepreneur to several CEOs of big companies. In 2010 he had a turnover of €18k and started with CEOs of Okura hotels, IDTV and FIAT. In 2013 the company made a turnover of about €80k and employed several student drivers. The business grows slowly because most new clients are contracted by word of mouth from other clients. He got his bachelor degree in 2012. “My clients recommend me to their business partners and that’s the way my client base grows.” The company is only locally active in Amsterdam and surrounding areas.
Sites

The owner of this company works alone and has no employees. He makes websites and multimedia productions. In 2012 he got his bachelor degree and started with a master. “During my master studies I still got enough orders through my website, without doing promotion activities”. In 2013 he managed to support himself with the earnings from his company. Because advertising content changes and more and more companies spend their advertising budget on internet content, a designer with entrepreneurial skills can nowadays easily make a living out of his skills. The student entrepreneur with a portfolio and the ability to work together with other craftsmen on a freelance basis seems to have a bright future. In the last five years, each year more than 50,000 people started a company as a freelancer in the Netherlands alone (CBS, 2014). Sites operates locally and services clients in the Netherlands.

Claim

Three students started Claim in September 2010. They help their clients with claims for delayed flights. Their most valuable asset is a software program, developed by one of them, through which they are able to connect to all the flight data and can work out in a simple and swift way how to fill out all the forms that are needed to make the flight companies accept a claim. In 2011 their turnover was about €100k. They had more costs that year, so they did not make a profit. In their first year they were accused by another first mover in the claim business for delayed flights. It was suggested that Claim had stolen the idea and that had also been given information by a former owner of the company in question. The story was reported in a Dutch newspaper (FD, March 2011). The claimant in this case had no legal grounds to build his case on, because this kind of ideas cannot be protected by intellectual property rights, but for the students in question it was an unpleasant experience in the start-up phase: “We had to deal with a lot of negative energy in this period”.

In 2011 they also won the elevator pitch competition of the Amsterdam University of Applied Sciences and received one year of free rent for their office. The first year they did not pay themselves a management fee and lived of the income of part-time jobs in the catering industry. In 2012 their turnover was about €200k, in 2013 it had risen to €350k, and they had 10 employees on the payroll. Claims amounting to several millions are still payable by several airline companies. It was very important for them that in October 2012 the European Court of Justice pronounced a definitive ruling in favour of the passengers whose flight was delayed. This meant a breakthrough for the business of Claim. During 2013 they expanded their services
over Europe and at present they are active in six European countries. Very important for Claim is the cooperation with a European law firm who can help them with the legal issues they are confronted with in all these countries. All three students of Claim obtained their bachelor degrees. The university made it possible for these students to be an intern in their own company. One of them wrote his dissertation about the software he developed for the company. Their goal is to bring Claim to every country in Europe. One of the means to achieve this objective is that they have an agreement with the two biggest sellers of flight tickets in Europe to the effect that every customer of these ticket sellers will find the name of Claim on their ticket referring to flight delays. “When we became more successful, more parties became interested in Claim, so we had to make choices with whom we continued working. Shared values were in this case most important”.

Presentation

In June 2011, three students started Presentation. They make Prezi presentations for corporations. In June 2012 one of the three students left Presentation. Clients of Presentation in 2011 were Coca Cola, Randstad, Yakult and Philips. They had one employee and an intern. Their turnover in 2011 was €27k. They hired an office space from Ogilvy which they pay by making presentations for Ogilvy.

The turnover in 2012 was €150k. They have contacts in Stockholm that acquire new clients. They wanted to write a book about Prezi and were in the race to become the best Dutch student entrepreneur of 2012 (they ended as second best). In 2012 they moved to their own office in Amsterdam and at the end of 2013 they had 12 employees working for them. One of the students went to Silicon Valley for a couple of weeks to contact the top people at Prezi. This worked out well and a good relationship was established. In 2013 this resulted in them being rewarded with the official independent Prezi Expert badge. One of the students graduated on his own company, the other student had still not graduated at the end of 2013. The aim of Presentation is to become a worldwide known brand in the field of storytelling and to become a company that can pay their employees a good fee, with a nice pension plan and good secondary benefits.

“The fact that a couple of satisfied clients became ambassadors of Presentation helped us a lot in the beginning to build our international client base”.

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Lenses

In January 2010 Lenses was founded. It is an add-on for, for example, safety glasses so that people with bad eye-sight can see better and perform their work. The product is imported from the United States. The student who started this company graduated in 2011 and now has a fulltime job. He runs his company alone. In 2013 he made a turnover of €15k. He has no employees. He manages his sales through his web shop and he also made flyers that are distributed by several opticians. In the three years I followed the student entrepreneur he was also active in several trade markets in the weekends to promote his product. He operates in the Netherlands only.

Lingerie

In February 2010, a student registered Lingerie with the Chamber of Commerce in Amsterdam. A highly exclusive boutique with erotic couture for women. Investment in supplies €50,000 and website €7,000. The website went life in September 2010. Turnover 2010 €20k. Turnover 2011 €100k. In February 2011 Lingerie opened a shop in a shop. This was not a success and in November 2011 she opened a shop of her own in Amsterdam. Clients visit on appointment and spend a lot of money during a visit. In 2011 she hired a PR company to take care of publicity. Actress Victoria Koblenko is one of the celebrities that make her brand known to the public. In 2012 Lingerie had its own boat at the gay pride canal show in Amsterdam. In 2013 she moved her shop to the centre of Amsterdam. She is very successful with deliveries of lingerie to hotels in Amsterdam. International lingerie suppliers are now working with Lingerie. Still she has more costs than turnover. Purchase costs and loss on supplies are high. Costs for decorating the new shop were also high. It was also hard to find a good partner to help developing the internet strategy of the company. Quote: “I changed website developers twice and in both cases I didn’t do the right background research but relied on the fact that they had a portfolio with important players in the market. I should have checked a couple of these players to see if they were satisfied with the service. This might have given me the right information to base my decision on.”

New contacts with suppliers made it possible to buy directly from stock, so less supplies are needed. In 2012 she stopped using her PR company and started doing the PR herself. She is very successful with online promotion through channels like Facebook and Twitter. In 2013 her Facebook account was shut down because of the explicit material she published. This gave her a lot of free publicity and she was even on Dutch TV because her Facebook page had been
shut down. This made her brand known to new customers. Lingerie is an internationally operating business through her website. Most of her online orders come from the United States of America, where she is linked to Amazon.com. The student stopped with her bachelor education during these years. “It was really hard to find a partner with a business instinct and also a passion for lingerie, in fact I’m still looking for the right person”.

**Appbuilder**

During the minor entrepreneurship three students studying Information Engineering started their company and built their first app, Bluppr, with which you can send a postcard from your smartphone to somebody with a picture from that phone. This was the first sample of their work and opened the door for them to work in the app building business. In the beginning they received a lot of support from one of the students’ father, who was the owner of a bakery. He helped a lot with structuring the firm and giving financial advice. Although the three owners had a lot of overlapping skills, especially in the field of ICT, the business grew slowly and for 60% of their turnover they became dependent on one specific client. This client offered the three students to come and work for his company. Two of the three students accepted this offer and are still working for this firm.

The remaining ex-student continued with Appbuilder and started an alliance with another company called Bluedesk. At the end of the research period the company had a portfolio of apps made for a variety of companies. The remaining student wants to grow the company into a sustainable business. “After my two partners left the company I had to work hard to develop a network of my own. The membership of some regional business clubs and the fact that I won awards for my work helped me a lot” In 2013 Appbuilder managed to make a turnover of €200k and had 5 employees. They operate in the Netherlands only.

### 3.4 Analysing the cases

As shown in Table 3.3 and Figures 3.3 and 3.4, the network of almost all the start-ups that were still active after a period of three years grew. The size of the network of weak ties grew most for the most successful start-ups, Claim, Presentation and Lingerie. They also were the only three start-ups that developed internationally. The other start-ups operated only locally and generated only an income for the owners (except Appbuilder, but in this case the network development was hindered by the fact that two of the owners left the company which was a major setback for the remaining owner). The size of the social network of the 10 student companies that quit within a period of three years did not grow and even diminished in most of the cases. The
reasons that these student entrepreneurs quitted were that they were unable to reach out to external relations for investments, did not manage to get free publicity by winning prices or could not connect to new clients because they were too busy with their operations. Two of the student entrepreneurs quitted their company to start working for their launching customer.

<table>
<thead>
<tr>
<th>Company</th>
<th>Network size end of year one</th>
<th>Network size end of year two</th>
<th>Percentage growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fans</td>
<td>6</td>
<td>8</td>
<td>33%</td>
</tr>
<tr>
<td>Taxi</td>
<td>7</td>
<td>10</td>
<td>43%</td>
</tr>
<tr>
<td>Rappers</td>
<td>8</td>
<td>8</td>
<td>0%</td>
</tr>
<tr>
<td>Sites</td>
<td>8</td>
<td>10</td>
<td>25%</td>
</tr>
<tr>
<td>Massage</td>
<td>3</td>
<td>3</td>
<td>0%</td>
</tr>
<tr>
<td>Claim</td>
<td>18</td>
<td>24</td>
<td>33%</td>
</tr>
<tr>
<td>Presentation</td>
<td>9</td>
<td>13</td>
<td>44%</td>
</tr>
<tr>
<td>Bags</td>
<td>11</td>
<td>8</td>
<td>-27%</td>
</tr>
<tr>
<td>Furniture</td>
<td>3</td>
<td>3</td>
<td>0%</td>
</tr>
<tr>
<td>Lenses</td>
<td>12</td>
<td>10</td>
<td>-17%</td>
</tr>
<tr>
<td>Lingerie</td>
<td>7</td>
<td>20</td>
<td>186%</td>
</tr>
<tr>
<td>Catering</td>
<td>8</td>
<td>6</td>
<td>-25%</td>
</tr>
<tr>
<td>Sales</td>
<td>5</td>
<td>3</td>
<td>-40%</td>
</tr>
<tr>
<td>Music</td>
<td>8</td>
<td>4</td>
<td>-50%</td>
</tr>
<tr>
<td>Sushi</td>
<td>11</td>
<td>5</td>
<td>-55%</td>
</tr>
<tr>
<td>Working</td>
<td>5</td>
<td>3</td>
<td>-40%</td>
</tr>
<tr>
<td>Appbuilder</td>
<td>7</td>
<td>12</td>
<td>71%</td>
</tr>
</tbody>
</table>

In Figures 3.2 and 3.3 the development of the social networks' weak and strong ties is shown of the companies that were part of this research, showing their development using graphics like used by Newbert et al., 2013. In these figures, the white dots represent the existing ties and the black dots the ties added to the company during the period of a year. In the first year we only have black dots, while all ties are added to the company.
Figure 3.2
The development of the social network of the seven companies that were still active (January 2014).

Development networks over time of the 7 companies that survived over the years.
(Black dots are ties added during a year, white dots are ties that still are connected to the company)

Figure 3.3
The development of the network of the 10 companies that quit their business within three years after the venture creation program (January 2014)
3.4.1 Strong versus weak ties

Most students depended on their strong ties (family and friends) for their first resources. This is in line with the findings of Edelman et al. (2016, 441), who point out that parents help their children overcome the barriers to entry into self-employment by providing them access to valuable resources, one of which is access to their social networks. Also Zimmermann et al. (2002, 417) concluded that due to a limited track record of the entrepreneur and his venture potential customers, suppliers and other stakeholders in the environment are reluctant to commit resources to a new business start-up. Family and friends help the nascent entrepreneur to gain status in order to convince others also to invest in the new born company.

The 17 cases I describe in this article also started with strong ties in the first period of their start-up, but after a short period of time they started to connect to formerly unknown people from businesses they did not now at first.

Seven student entrepreneurs out of the 17 cases were successful in making these connections. The other 10 students were not able to develop their network skills in this period of time and therefore could not connect to the outer world. I would like to state that the students connected to the 10 companies that were out of business within three years, were unable to connect to business contacts needed for the survival of their company. The student start-ups that used their family for working within their catering start-up were able to provide their first services, but because they did not expand their network, there were no orders for new events and the start-up failed (Catering). “I had to do the catering for relations connected to my family, but after these orders, I wasn’t able to bring in new ones.”

The entrepreneur of Lingerie used her family network to get a loan of €50k to invest in her first stock and for financing the website. She took a big risk in doing so, but because she was fully committed to her start-up and promoted her company well, she managed to gain legitimacy within her first year and managed to bind international suppliers to her. She could make appointments about her stock and was able to order directly from her suppliers, reducing her costs to an acceptable level. “The support of my family helped me to overcome the moments of doubt I had at the beginning of my adventure.”

Claim’s network became heterogeneous by connecting with weak ties at the moment needed. They had no contacts in the travel industry or in the legal world. By making contacts through their student association, they developed the right connections in no time. Once they had a contact with a big network in the travel industry, they considered hiring this person to help them,
but in the end they could manage without this help and grew their network fast enough to make progress. Quote of the founder: “I asked myself, do we need this person to get in contact with our target group or can we reach them ourselves?”

As I was told by these student entrepreneurs, their network started to work for them over time. The more their business grew, the more interesting people popped up in their network. They had to learn to distinguish the weak ties they needed to invest their time in from the ones they had to let go.

**Proposition 1a:** Student entrepreneurs who started to operate internationally with their start-up were more attractive for weak ties to invest in than locally operating student entrepreneurs. This helped in the period of resource mobilization and for gaining legitimacy to reach out to new relations.

**Proposition 1b:** Investing time in creating free publicity, participating in business competitions and visiting industry events helped student entrepreneurs to expand their network. These activities mostly helped for gaining legitimacy.

### 3.4.2 Information access

The connection with lawyers and accountants gave Claim the opportunity to connect with the right resources (the mechanism of information access in the period of opportunity identification). This is in line with the research of Alice de Koning (2003), who emphasized that most successful entrepreneurs obtained their information by contacting people and talking about opportunities. In particular lawyers and accountants were professionals you could share thoughts with, without having to consider that they would steal the idea for themselves, according to the entrepreneurs interviewed by Alice de Koning (2003). Claim also often used an online network of experts “After a while consultants started asking money for the time we spent with them, so in the end our impartiality diminished and we became more critical about the people we spent time with, although the goodwill factor remained an important asset” (quote entrepreneur Claim).

All the student entrepreneurs (in the group of seven start-ups that survived) were not afraid to ask for help. Because they were young and inexperienced, they experienced a lot of goodwill from the people they approached. This is also in line with the conclusions of Saxton et al. (2016) who suggested that the venture advocate who possesses the necessary means to assist a founder of a new company will do so because this increases his status within the start-up community.
Proposition 2a: Student entrepreneurs get access to new information when they are not afraid
to ask for help and use the goodwill the outside world has towards them. This helps in the
period of opportunity identification and resource mobilization.

Proposition 2b: Student entrepreneurs who share their information with, for example, lawyers
and accountants can adjust their proposition for the better. They use their network for
opportunity recognition.

3.4.3 Brokerage
The network of Presentation became heterogeneous by doing assignments for Ogilvy in
exchange for the free rent of a part of the office of Ogilvy. This also was a result of being an
intern at Ogilvy’s in the first place. In this way they made their first contact in the industry and in
no time they were given assignments by Coca Cola, Vodafone, Philips and other multinationals.
Quote founder: “One of the CEOs of Ogilvy in particular liked our work and introduced us to
several companies in his network, this helped us a lot” (the mechanism of brokerage for
resource mobilization and gaining legitimacy). This kind of intelligent altruism and bartering
between Presentation and Ogilvy is noticed in the literature as part of an effectual networking
strategy in which entrepreneurs act in a way that benefits others as well as themselves
(Sarasvathy & Dew, 2008).

The network of Taxi developed by word of mouth. The founder said: “If the CEO I was driving
around felt happy and was satisfied with the service I delivered, he often recommended me to
other CEOs in his network and so my business grew slowly but steadily” (the mechanism of
brokerage while gaining legitimacy and mobilizing resources).

Proposition 3: Student entrepreneurs use brokerage by making their clients ambassadors for
their company while gaining legitimacy and mobilizing resources.

3.4.4 Status
The companies of the student entrepreneurs that were unable to establish a good
communication with their surroundings no longer exist.

Claim, Lingerie and Presentation were able to promote their start-up by winning awards and
getting free publicity in newspapers and online magazines (status-enhancing). They even got
attention on Dutch television. Claim benefitted from the attention by establishing a relationship
with the municipality of Amsterdam and companies like Ernst & Young. Presentation won
awards by making the best Prezi presentations in the world (according to Prezi) and becoming a
preferred Prezi supplier. Clients who were satisfied with their service became on some occasions fans and introduced Presentation to their relations. Lingerie’s network became heterogeneous as a result of her contacting different players in the lingerie business: photographers, stylists, celebrities, etc. The exclusivity and quality of her products drew different resources. Quote founder Lingerie: “The fact that Victoria Koblenko wears my lingerie and promotes it publicly helped me a lot to reach out to the rich and famous”.

The entrepreneur of Appbuilder also appeared frequently in the local news, he won a local award for most innovative entrepreneur and generated a lot of free publicity. The student entrepreneurs of Sites, Lenses and Taxi did not reach out to the press very often and this is one of the reasons their network developed slowly. These three companies did not hire employees. The variety of symbolic actions (like winning awards) enabled the student entrepreneurs to gain recognition from the outside world and to build on their status.

**Proposition 4:** Student entrepreneurs work on the status of their start-up by connecting to well-known parties by making use of a variety of symbolic actions, like winning rewards. These activities help them in the process of gaining legitimacy.

3.4.5 Embeddedness

The group of 10 student entrepreneurs that did not work on extending their network to different suppliers or customers were not able to transform their start-ups into operational organizations. These students were so embedded in their network that for a large part their revenue became to depend on one or two clients.

The student entrepreneurs of Massage depended on the university as their client and had to give up when the university did not extend their contract. They were too busy with their operations (giving massages to employees) that they forgot to reach out to new clients. The student start-up Solt worked for one client who they reached through the network of the university and this became so serious that the student entrepreneurs decided to become employees of their client. The student entrepreneurs of Appbuilder were depending on one big client, who offered them to become his employees. This meant that two of three nascent entrepreneurs left the business and one of them chose to continue on his own.

The owners of the other companies were also embedded in their network but they benefitted from this embeddedness. Presentation was doing a lot of work in the slipstream of Ogilvy, but they were able to expand their network by making a couple of their clients ambassador and by doing so connected to a new client base outside of Ogilvy’s network. They also benefited from
multiplex relationships by, for example, becoming involved in projects of the municipality of Amsterdam so that they could contact potentially interesting stakeholders.

In the case of resource mobilization the owner of Lingerie lost a lot of money by forgetting to do sound background research into the party that was responsible for developing her first website. She trusted their professionalism and skills without doing a thorough background search. In the end this meant she had to do business with another party that could do the job. “I learned the hard way to not only trust the people you depend on by simply taking their word for what they say”.

Also for resource mobilization the owner of Lingerie leaned heavily on investments of her family. When her company became more successful she was able to attract credit from her suppliers in a way that she could directly order from their stock and did not have a big stock position of her own. Presentation, Taxi, Appbuilder and Claim were able to invest in the development of their company with their own means. Their employees could be paid from their own means. The profit they made was directly invested in their company so that they did not become dependent on a bank or an investor. Sites and Lenses stayed so small and only had to take care of themselves, so no investments from external parties were needed.

**Proposition 5a:** Student entrepreneurs embedded in the network of the university or relying on the university as their first customer, can get caught up in their operations and forget to make time for networking. This can make them vulnerable in the stage of resource mobilization, and even mean the end of their business.

**Proposition 5b:** Student entrepreneurs that were able to recruit ambassadors for their service were able to gain a bigger market share over time. This enabled them to earn enough money to invest in their company from their own gained resources and made them independent of investors or banks.

3.4.6 Sanctions

During the period of this research I could only find one company that had to deal with sanctions during their development. This was Claim when they were expanding their business to Germany. The first year of their operations they were faced with a lot of challenges as they had to deal with several laws in Germany. They were sued for not acting in accordance with German law and they had to withdraw from the German market for some time in order to get their operations straight. A second attempt was successful with the help of local connections.
3.5. Conclusions and future research

3.5.1 Conclusions

In this paper we developed a conceptual model based on earlier research (Figure 3.1) in which the relationship between mechanisms of social networking and the entrepreneurial processes of gaining access to new information, mobilizing resources and gaining legitimacy are distinguished. Using these mechanisms while going through the several phases will develop the entrepreneurial network. This paper addresses the question how student entrepreneurs develop their network using these mechanisms going through the specified phases while creating their company.

Based on the results of the case studies we conclude that the ongoing development of the social network is of crucial importance for the survival of the start-up. Once someone stops with developing his network, the start-up is bound to disappear. In 10 of the 17 cases we followed in this research, one of the reasons why the student entrepreneur was unable to make his start-up work had to do with the fact that the student entrepreneur was not able to connect to new ties (clients, investors, suppliers, etc.) in order to get the necessary resources for his company to develop. The student entrepreneurs that developed a scalable, internationally oriented business were the most successful in attracting resources for their start-up. They attracted these resources by showing no fear in asking for help from yet unknown parties, winning prices and rewards to put their company in the spotlights and winning over ambassadors who introduced them to new clients or helped them find other resources (profiting from the social mechanisms of gaining new information, building on their status and brokerage).

The research also gives an insight in the two sides of the medal of being embedded in a social network. On the one hand embeddedness can give access to new resources and information, but on the other hand it can make someone blind for the further development of their company and make the start-up depend on its first client. In the cases of the student entrepreneurs we found that this was of crucial importance for the development of the start-up. Being too much involved on the operational side of the business, without developing new network ties, can make the start-up depend on one important client only and can mean the end of the business when this client is lost. In the case of the student start-up Appbuilder, the third owner showed that losing the most important client does not always mean the end for a company. Strong commitment in combination with a good service/product can help to survive with the help of others.
Our research also reinforces the existing insight about the importance of developing a heterogeneous social network consisting of strong and weak ties in order to establish a profitable organization (Newbert et al., 2013; Elfring & Hulsink, 2003; Shane & Cable, 2002). It also shows the important role of the university in this process, in many cases by being a first customer or introducing student entrepreneurs to networks otherwise out of reach for them. This involvement has two sides: the motivated student entrepreneur will use this help as a stepping stone to new experiences but the student entrepreneur with little ambition and the inability to reach out to the outside world makes this the endpoint of his experience and the company stops when the university withdraws.

3.5.2. Suggestions for future research
As their network grows and more parties become interested in what they are doing, the student entrepreneurs also need to develop a radar for parties that just want to benefit from their success and have little or nothing to offer. In this process the importance of shared values is being introduced in the choice for partners that are interesting or not. Because this process did not start to appear until at the end of the period we were monitoring the student entrepreneurs, we think it is interesting to find out how this ranking process works and what other mechanisms are involved. This also might be something worth of doing future research into.

Also the student entrepreneurs learned how important it is to check the credibility of parties you are going to work closely with and who can damage your reputation or influence important processes you depend on. Often this process is learned the hard way and the student entrepreneur has to build up a new relation with another party and can lose a lot of valuable data. For educators or coaches working with young entrepreneurs this might be something to refer to and also shows the importance of a thorough background checking process. How to proceed exactly in these cases and what the best steps to be taken should be, is something that could be of interest for further research.

A last suggestion for further research is based upon the question of Stuart and Sorenson (2007): If networks do confer competitive advantages in entrepreneurial settings, do all actors enjoy equal access in the competition for relationship-based resources, or do ascriptive characteristics (like being part of the population of students) affect an actor’s ability to acquire a network-based advantage or disadvantage? It seems that the goodwill factor plays an important role in the case of student entrepreneurs, but to find out if this really distinguishes them from non-student entrepreneurs needs to be investigated in more detail.
Chapter 4 How former student entrepreneurs motivate their employees to use their social capital in favour of the company

Abstract

The literature about the social network of entrepreneurs emphasizes the importance of the social network of the founders of the company. As the company grows and employees are hired, we assume that the social capital of the company grows. How do entrepreneurs persuade their employees to activate their social network in favour of the company? By analysing three cases of former student companies we draw conclusions about the way former student entrepreneurs inspire their employees and build trust in a way that employees associate themselves to their company and engage in activities that lead to the introduction of new employees, business leads and new knowledge. We make a distinction between the activation of social networks in a B2C and a B2B environment. Further analysis leads to propositions about the contribution of employees' social network to the total social capital of the firm and restrictions of the use of employees' social networks in a B2C or B2B environment. Findings contribute to the understanding of the contribution of the social network of employees to the network of an entrepreneurial company and the way entrepreneurs can stimulate this. This explorative research can be the start of more in-depth inquiries into this yet underexplored phenomenon.

4.1 Introduction

Over the last twenty years a lot of research into the use of social networks by entrepreneurs has been done. Especially the role of strong and weak ties has been a subject of discussion. Over the years some consensus seems to have grown on the role of strong ties in the start-up phase of the nascent company in order to get access to fine-grained information, resources below market price and mental support (Hallen & Eisenhardt, 2012; Elfring and Hulsink, 2007; Jack, 2005; Hite & Hesterley, 2001; Renzulli et al., 2000). The role of weak ties in the next phase of the start-up seems to be important in order to gain legitimacy, access to capital or new information (Newbert et al., 2013; Stuart & Sorenson, 2007; Elfring and Hulsink, 2007; Rowley et al., 2000). In all these cases the emphasis was on the ego network of the entrepreneur.

As the entrepreneur develops his business and starts hiring employees, new social networks can be added to the company. The company's social network can become a combined network of the entrepreneur and his employees. In their effort to set the agenda for research on social networks and strategic entrepreneurship, Toby Stuart and Olav Sorenson (2007) asked the
question: “At what point, and to what end, do we distinguish the network of early-stage ventures from those of their founders and key recruits, and how should we think about employees' professional networks that span firm boundaries?” In the literature this question has not been addressed yet for the entrepreneurial firm. It is our aim to shed light on the way this process works and what mechanisms play a role for the employee to activate his social network in favour of the entrepreneurial firm he works for.

The entrepreneur starts building the social capital of the firm with the employees he hires over time. According to Whitener (1998), Leana (1999), Lechner (2003) and Bedarkar (2014), one of the key elements in building social capital is trust. We are curious as to how the entrepreneur can gain the trust of his employees and help them to associate positively to the company in a way that they are willing to use their social network in favour of the company.

To identify the way the entrepreneur gains the trust of his employees and builds the social capital of his company, we collected data from three entrepreneurial companies founded in the period 2006-2010 with a total of 165 employees (September 2017). We interviewed the owners of the companies (former student entrepreneurs) and 9 employees in total. In a pre-study of several entrepreneurial companies we discovered a difference in approach by companies in the B2B sector versus companies in the B2C sector, so we chose one company in each sector and a third company that works with a focus on both market sides.

To find out the extent to which employees trust the entrepreneur, we focused on five categories of behaviour that capture the employees' perception of trustworthiness: behavioural consistency, behavioural integrity, sharing and delegation of control, communication and demonstration of concern (Whitener et al., 1998). By doing so we were able to get a clear view on the perspective of the employees towards the entrepreneur and could formulate propositions about their network behaviour in favour of the entrepreneurial firm. In this way we extend our knowledge of how social capital in an entrepreneurial firm can be built and how employees use their social network in favour of the firm if they trust the entrepreneur. In addition, the associability of the employee towards the company plays an important role towards the decision an employee will make in order to engage in actions in favour of the company, like introducing someone of his social network to the firm he is working for. This is part of the engagement an employee has with his work, engaged employees want their organization to succeed because they feel connected emotionally, socially and mentally to its mission, vision and purpose (Bedarkar, 2014). Engaged employees speak positively about their firm to others, they like to be a member of the organization and they make an extra effort and engage in behaviour that
contributes to business success (Markos, 2010). This part of our research also contributes to the HR literature about entrepreneurial firms.

Most importantly, our study brings us a step further in making a distinction between the network of the entrepreneur and the network of the firm. We show that especially the entrepreneurial firm, with employees that are dedicated to the mission and the purpose of the firm, has a social network that extends the ego network of the entrepreneur and enables the firm to tap into a network that is more diverse and gives opportunities especially to connect to new employees, new clients and new information.

This article is structured as follows. In Section 2, we present current network approaches and former research about building the social capital of the company. On the basis of this literature, a research framework about the way entrepreneurs/managers motivate their employees to use their social network in favour of the company is developed. Section 3 focuses on the context and methodology. Section 4 is about the cases and the dataset, we present three cases of (former) student entrepreneurs in the service industry. All the start-ups are Dutch companies. These cases provide empirical material from which a number of propositions are developed concerning the way (former) student entrepreneurs inspire their employees and make them use their social network in favour of the company (Section 5). Finally we will draw our conclusions and give suggestions for further research.

4.2 Building trust and associability in order to make employees use their social network for their company

When we look at the capital of a company it can be divided into financial capital, human capital and social capital. Financial capital can be valued by the value of, for example, the buildings and machines a company owns and the money in the bank. Human capital can be valued by the knowledge, experience and skills of the employees working for the company. Social capital on the other hand is considered a valuable asset reflected by the existence of close interpersonal relationships among individuals (Coleman, 1988; Lin, 2001).

Nahapiet and Goshal (1998) suggest that there are three specific aspects of social capital: (1) a structural dimension, (2) a relational dimension and (3) a cognitive dimension. The structural dimension focuses on whether the employees are connected at all, the relational dimension focuses on the quality or the nature of this connection (i.e. are they characterized by trust, intimacy, liking, and so forth?) and the cognitive dimension focuses on the common perspective or understanding among the employees.
Other researchers have proposed alternative frameworks. Bourdieu (1986), for example, suggests that social capital is expressed by (1) the size of the group or network (how many individuals are represented by the collective) and (2) the volume of capital possessed by the members of the network (the cumulative resources of the networked individuals). Leana and Van Buren (1999) posit two components of interest in building organizational social capital: (1) associability (willingness of network members to subordinate individual interests for the good of the collective) and (2) trust (willingness of members to be vulnerable).

For this research we adopted the model of organizational social capital of Leana and Van Buren (1999) because they point it out as a starting point in theory and research. Most of the research on social capital has been executed in large firms with many employees, our research refers to companies in the development stage with only a small number of employees (20-80 persons). These firms are important drivers of innovation and economic growth (Audretsch & Keilbach, 2008). Their success and survival probability are dependent not only on the market situation, entrepreneurs' experiences, knowledge, and behaviour, but also on employees' performance (Barrett & Mayson, 2008; Hayton, 2003; Rauch & Hatak, 2016). Especially in young and small firms, each individual usually contributes to performance and success (Tharenou, Saks, & Moore, 2007; Van Yperen & Hagedoorn, 2003).

We particularly focus on the former student entrepreneur, who has used his own social network to build his firm and by building the social capital of his firm can tap into the social network of the employees in question. So in this case we zoom in on the personal social networks of the employees forming - together with the social network of the entrepreneur(s) - the social capital of the company. This personal social network exists of strong and weak ties, as many researchers have pointed out in earlier studies. The structural and relational aspects of social capital were often highlighted, starting as early as in 1973 with the theory of weak ties formulated by Granovetter, pointing out that those who possess ties with individuals outside their cliques typically have better access to unique information and resources. Later, Burt (1992) built upon this theory by formulating his structural hole theory, suggesting that individuals who fill structural holes that exist between networks (that are otherwise unconnected) often gain access to unique and timely information, thus enhancing bargaining power. Overall this research suggests that good contacts (i.e. a high level of social capital) are helpful in obtaining jobs (Burt, 1997), getting promoted (Podolny & Baron, 1997), and having a successful career in general (Seibert et al., 2001).
Over the years, one of the toughest challenges confronting the CEOs, HR and the business leaders of many organizations, has been to ensure that when their employees check in everyday, they not only do it physically, but also mentally and emotionally (Bedarkar & Pandita, 2014). Young entrepreneurs refer to managing employees as the most difficult part of building a business, lack of people management experience might even be a constraint on the speed of growth in some cases (Hickie, 2013: 184). To measure the way employees engage in their company, Hewitt (2012) defines engagement as: “the state in which individuals are emotionally and intellectually committed to the organization or group, as measured by three primary behaviours: Say (employees speak positively about the organization to others inside and out), Stay (employees display an intense desire to be a member of the organization) and Strive (employees exert extra effort and engage in behaviours that contribute to business success).” Engaged employees exhibit these three behaviours (Say, Stay and Strive).

The work environment in entrepreneurial firms is highly dynamic and complex because processes in entrepreneurial firms are characterized by reactivity and informality (Barrett & Mayson, 2008; Marlow, Taylor, & Thompson, 2010). Entrepreneurial firms mostly have limited resources, cannot provide high salaries, job security, or fixed career opportunities (Barrett & Mayson, 2008; De Geest et al., 2015; Leung, 2003). Thus, the work environment in entrepreneurial firms is less defined, more fluid, and more dynamic than in established enterprises (De Geest et al., 2015). Entrepreneurs expect a lot from their employees because, in many firms, each needs to address several troubles at the same time and has close and personal contact with the founder (Vecchio, 2003). Moreover, employees in entrepreneurial firms often need to be creative while fulfilling their tasks (Cope et al., 2011; Jong & Den Hartog, 2007). These conditions put high pressure on the entrepreneur to win over his employees, make them trust him and dedicate their working life to the company and subordinate their individual interests for the good of the collective.

Empowering leadership, including self-rewards, self-leadership, participative goal-setting, teamwork, and encouraging opportunity thinking, seems to be useful to stimulate commitment and motivation in entrepreneurial firms (Ensley et al., 2003; Ensley et al., 2006). To lead in an entrepreneurial context, some researchers suggest concepts that describe an entrepreneurial leadership style (Gupta, MacMillan, & Surie, 2004). Renko et al. (2015) define innovativeness, creativity, passion/motivation, tenacity/persistence, bootstrapping, vision creation, and risk taking as key elements of an entrepreneurial leadership style. They find that this kind of leadership is shown by entrepreneurs rather than non-entrepreneurs. The passion of the
entrepreneur might even be contagious (Cardon, 2008) and could help the entrepreneur to engage his employees in his company.

For this explorative research we want to focus on the two aspects formulated by Leana (1999), the building of trust and associability in order to engage employees to the company. The research framework we developed focuses on the behaviour of the former student entrepreneur and how this behaviour influences the development of trust in the entrepreneur and the associability towards the company in general. As a result of these developments we want to find out if the employees activate their social network in favour of the company and if this activation leads to, for example, new employees, new clients, new information or other resources that can benefit the company (Figure 4.1).

**Figure 4.1**

**Research Framework**

![Research Framework Diagram]

4.3 Methodology and cases
4.3.1 Methodology
The objective of this explorative study is to contribute to theory building about the way entrepreneurs stimulate their employees to use their social network in favour of the company. In line with the more exploratory rather than hypothesis-testing nature of the research, we put forward propositions after the empirical research (Yin, 1984). The data collection and analysis are guided by the research questions (Pettigrew, 1990) and a research framework (Eisenhardt, 1989).
This case-based research project was divided into four steps. The first was to develop specifications of constructs relevant to student start-ups with employees. The second step was to select young student start-ups from the Netherlands. This was not a random process, but one that was based on theoretical sampling (Eisenhardt, 1989). We wanted firms operating in different branches and with different target groups (B2B versus B2C). Because this research is about companies that started during university, we used the data we gathered about these start-ups during the period 2005-2011 at the universities in Amsterdam. We were able to find three companies of former students that met the criteria. The third step concerned the collection of data and analysis. This part of the study was conducted through interviews with founders (each company one founder) and employees (three per company, in total 385 minutes of interviews), and an analysis of company HRM policies, internal memos about strategy sessions and the websites and social media sites of the companies. The employees that were interviewed had different tasks and were employed during different periods of the development of the entrepreneurial companies. By making these choices we were able to get a diverse view on the company and the role of the entrepreneur over time. These sources enabled us to triangulate our findings to build stronger interpretations (Yin, 1984; Zott & Huy, 2007).

Finally, the cases were prepared and written between September and December 2017. These multiple data sources were used to check the validity of the data. The last step concerned the analysis of the data. For each case the involvement of employees’ social network in favour of the company was analysed and the role the student entrepreneurs played in stimulating this behaviour. A panel of colleagues helped to find the most significant statements made by the employees. I confronted this panel with about 100 quotes made by the interviewees, subdivided over the different subjects under research and asked them to choose 20 quotes that were the most worthwhile to mention, in an article, in their eyes. The quotes with the most votes I used for the article. According to the replication logic (Eisenhardt, 1989), comparisons across the various cases were made. When case findings disconfirm a relationship, it provides an opportunity to refine and extend the theory. However, for future research it is interesting to reformulate our propositions into testable hypotheses for a larger sample of start-ups.

4.3.2 Cases
We present short descriptions of the three focal cases (the names of the companies and respondents are disguised to ensure confidentiality).
Claim
Claim, a business started in 2011 by three student entrepreneurs in the bachelor phase of their study. A B2C company handling claims for people whose flights are delayed. Grown within six years into a company with over 100 employees and operating in seven countries. Most of their employees work at their headquarters in the Netherlands. This year they started to organize the company with business units responsible for one country. So they now have several layers within the company. In Germany they have a special business unit of ten employees to take care of the German market. When I interviewed the student entrepreneur that started Claim he stated that the most important contribution from the social network of their employees had to do with recruiting new employees, most of their new employees were found by word of mouth. He also stated that the employees of his company almost feel like family.

Presentation
Presentation, a business started in 2012 by two student entrepreneurs in the bachelor phase of their study. A B2B company making Prezi presentations for corporate companies. Grown within five years to a company with over 15 employees and servicing big brands like ING, Coca Cola and Philips. Nowadays they are also working on projects for clients that do not use Prezi, but need a designer company for their brand. They have offices in New York and in Singapore, each office with one employee. These offices are important to build the network of the company in these areas. The aim of the founders is to build a worldwide known brand in the field of storytelling and to become a company that can pay their employees a good salary, with a nice pension plan and good secondary benefits. The entrepreneur acknowledges the importance of the social network of his employees, particularly in New York and Singapore where these employees are the company's face to the outside world. The employees in these cities were also hired on the basis of their skills to build a network for the firm.

Temping
Temping, a business started in 2005 by three master students of the University of Amsterdam as a temp agency. A B2B/B2C company with clients in the industry on the one hand and talented students on the other. The company has over 50 employees and has several divisions for the different industries in the Netherlands. The student entrepreneur has a specific strategy to make use of the social network of his employees. With all the teams they map the connections they have in a specific industry and judge them on their value for the company. Account managers and recruiters are pushed to visit places where they exchange knowledge about the field they are working in, in order to expand their social network in favour of the
company. The company wants to facilitate young talented students to create their dream job and help employers that fit into the philosophy of the company in need for employees with an academic background. Although this entrepreneur is aware of the possibilities of the social capital of his employees for his company, he also acknowledges that he needs to be careful to claim the social network of his employees because this might have a contrarian effect on their willingness to deploy their social network for the company.

Table 4.1
Numbers and figures of companies

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<th>Claim</th>
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<th>Temping</th>
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</tr>
<tr>
<td>Employees 2014 (FTEs)</td>
<td>10</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Employees 2015 (FTEs)</td>
<td>15</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>Employees 2016 (FTEs)</td>
<td>36</td>
<td>14</td>
<td>39</td>
</tr>
<tr>
<td>Employees 2017 (FTEs)</td>
<td>100</td>
<td>16</td>
<td>34</td>
</tr>
<tr>
<td>Assessment of success in attracting and retaining high-quality human capital</td>
<td>Good, all employees have a bachelor or master's degree and many different backgrounds. Average age is 26</td>
<td>Good, all employees have at least a bachelor's degree and are a mix of seniors and juniors. Average age is 32</td>
<td>Good, all employees have a master's degree. Good mix of seniors and juniors. Average age is 35</td>
</tr>
<tr>
<td>Turnover 2015</td>
<td>3.8 M</td>
<td>500K</td>
<td>6.7 M</td>
</tr>
<tr>
<td>Turnover 2016</td>
<td>5.3 M</td>
<td>720K</td>
<td>7.9 M</td>
</tr>
<tr>
<td>Turnover 2017</td>
<td>13 M</td>
<td>1.2 M</td>
<td>5.8 M</td>
</tr>
<tr>
<td>Total external funding until 2016</td>
<td>Zero</td>
<td>Zero</td>
<td>900K (repaid in 2010)</td>
</tr>
<tr>
<td>Assessment of success in finding funding</td>
<td>Did not seek funding</td>
<td>First funding in 2017</td>
<td>First funding in 2007</td>
</tr>
</tbody>
</table>
4.4 Analysis of the cases

4.4.1 Trust in student entrepreneurs

In all the cases multiple entrepreneurs were involved in the founding process of the companies under scrutiny. During the interviews with the employees about the way the entrepreneurs developed trust within their company, the roles of the different founders came to the surface. The strong connection between the founders and the informal and open way they communicated was pointed out as an important asset in the way the team was built over the years and trust was won.

While interpreting the interview data we labelled the statements of the interviewees according to the five categories of behaviour that capture the employees' perception of trustworthiness of the entrepreneur: behavioural consistency, behavioural integrity, sharing and delegation of control, communication and demonstration of concern (Whitener et al., 1998). A panel of five university colleagues helped to decide which statements were most significant for this study.

All entrepreneurs score positively in these five categories of behaviour. Of course these men are no saints, but the interviewed employees emphasized that the work atmosphere created over the years is one of mutual trust and respect. Not all interviewees are satisfied with the consistency of the behaviour of the entrepreneur they are working for, sometimes they see that the entrepreneur acts in conflict with former agreements, while they are enthusiastic about new insights that the entrepreneur had not shared with his employees beforehand. No complaints were made about the integrity of the entrepreneurs under scrutiny. The employees seem to be pleased about the way they are treated by their employers. Due to the relatively small teams (15-100 people) the communication among the group members is direct and open. The observation of Barret & Mayson and Taylor et al. that entrepreneurial firms are characterized by reactivity and informality (Barrett & Mayson, 2008; Marlow, Taylor & Thompson, 2010) was confirmed by the interviewed employees. The employees are satisfied with the way the owners are communicating. All interviewees were positive about the involvement of the former student entrepreneurs in their wellbeing. Most of the interviewees were positive about the way responsibility is shared although some critical comments were made regarding the possibility of having to take on too much responsibility during stressful periods (see also next paragraph).

Numbers 1 to 4 correspond to quotes of members of claim, 5 to 8 are members of Presentation and 9 to 12 refer to member of Temping. Number 1, 5 and 9 refer to the founders of these firms.
<table>
<thead>
<tr>
<th>Trust</th>
<th>Employee/employer</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioural Consistency</td>
<td>4</td>
<td>“Sometimes our boss can be so enthusiastic about something that he acts without thinking about the arrangements we made about certain topics. In these cases we help him to recollect his memory about these arrangements and then he apologizes about his action and we can go on.”</td>
</tr>
<tr>
<td>Behavioural Integrity</td>
<td>3</td>
<td>“He is sensitive and interested in his employees, but also decisive when it has to do with business decisions. You can also feel he takes your opinion seriously, that makes it great to work with him.”</td>
</tr>
<tr>
<td>Communication</td>
<td>6</td>
<td>“I really experience that we’re working as a team over here, the successes are celebrated as a team effort.”</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>“We are very open about the figures like profits, losses, mistakes we made. We want to be as transparent as possible towards our employees.”</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>“The way they are communicating with their employees is very informal. I also would say warm and humanly, you feel at home.”</td>
</tr>
<tr>
<td>Demonstration of concern</td>
<td>7</td>
<td>“They always take time for a personal conversation, they notice it when something is wrong with you and ask about your welfare. They also notice it when you don’t agree with something, without saying it and then they ask you for your opinion.”</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>“He walks around on his socks, cleans the toilet and is the first one on Friday to hand you a beer.”</td>
</tr>
<tr>
<td>Sharing and delegation of control</td>
<td>10</td>
<td>“We are working to become more self-steering, so this places the burden of responsibility on the employees to find the right way to work together and there is not that much hierarchy. This sometimes results in a little tension in the teams.”</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>“When I started to work here the work processes were not totally clear and over time we figured it out how we could do it the best way, so nowadays we have a clear structure and it has been a good experience for me to be part of this development.”</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>“They really give you the lead in your function and that has helped me a lot to develop my own style. It gave me a lot of confidence.”</td>
</tr>
</tbody>
</table>

**Proposition 1A**

The interaction between the founders seems to play an important role in winning over the trust of the employees in an entrepreneurial company.
**Proposition 1B**
Showing genuine interest in employees, building a blame-free environment and being transparent about the development of the company helps entrepreneurs to win the trust of their employees.

**Proposition 1C**
Feeling part of the family and having a role in building a company is an important factor in the way the trust of employees is won in entrepreneurial companies.

**4.4.2 Associability to the company**
All the interviewed employees of the three firms were highly involved in the company. They talked about the way they are emotionally connected to the company and are challenged by the mission and vision of the company and the way the entrepreneurs express themselves. They all feel very comfortable about the freedom they have and the responsibility they get. A point of concern was noted by one of the employees of Temping about the fact that employees are subjected to too much stress because they are sometimes motivated to work too hard for the company.

“In the beginning we had real high expectations about what we were doing and the working pace was really high, more focused on results. I had to learn to point out my boundaries. There is a real high level of loyalty towards the firm” (Employee, Temping).

The associability of employees towards the company is influenced by the cooperation among employees, the emphasis on the welfare of the group and the relation to the collective goal of the company. Comparing the employee handbooks of the firms with each other we noticed that the handbooks of Claim and Presentation were quite conservative and straightforward, based on standard handbooks to be found on the internet, and mostly focused on what to do and not to do when at work for the company. The HRM policy of both companies is still under construction and no policy about, for example, the deployment of the social capital of the employees has been developed. Temping's handbook seems to be more mature, this company is involved in the people business and as their main goal is to help young professionals to find work they really care about, their handbook provides a guide to reach this goal. Temping is also the most mature company of the three businesses under scrutiny.
Working agreements

Working agreements, we don’t like the words. Temping prefers to look at the world in a positive way. Without framing something with arrangements. Yet it is true that we can promote a positive working atmosphere with a few good agreements. This allows us to prevent uncomfortable situations or to fall back on norms and values that we have previously recognized with each other. You get our complete trust and we therefore assume that it will be in both your and our interest to formally make these agreements.

All interviewees are positive about the team they are working in and feel committed to the group they are working with. But they admit that working together can be quite a challenge.

Former student entrepreneurs share their plans with their employees and are open to suggestions from their employees. They also share the way their business develops. In line with the observations of Cardon (2008) the employees think the passion of the entrepreneurs is contagious and motivates them to dedicate themselves to the company. This also is in line with the findings of Markos (2010) about engaged employees. In Table 4.3 the most worthwhile statements on this topic can be found (chosen by a panel of colleagues).

<table>
<thead>
<tr>
<th>Table 4.3</th>
<th>Associability to the company</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooperation among employees</strong></td>
<td>Employee/employer</td>
</tr>
<tr>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td><strong>Emphasis on welfare of the group</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Associability towards collective goals</strong></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

---

2 Quote from Temping’s employee manual (2018)
Proposition 2A
The passion of the entrepreneur is an important factor in helping the employees to associate positively to the company.

Proposition 2B
The informal sphere in the entrepreneurial company and the familiar way the employees associate with each other makes the employees refer positively to the company.

Proposition 2C
The dedication of employees in an entrepreneurial firm makes it important for the entrepreneur to be aware of the possibility of overload.

4.4.3 Employees use their social network in favour of the company
We asked the employees of the different companies if they use their network in favour of the company. We distinguished three kinds of network uses: online, family and friends, and business contacts.

4.4.3.1 Online use
Employees use their online network like Facebook, Instagram and LinkedIn for posting vacancies or share stories about company outings. Temping's CEO has a strong opinion about using social media sites: “We share vacancies on social platforms, but mostly we do it on our own website inspired by the vision 'never build a house on somebody else’s property', I think that you have to use your own channels as much as possible” (former student entrepreneur Temping). Despite this opinion, employees of all the three companies under scrutiny, including Temping, use their social media channels for posting vacancies and with success!

Social media
Social media like LinkedIn, Twitter, Instagram and Facebook offer the possibility to show how proud you are of your work and can provide a contribution to a positive image of our client. Nevertheless it is important to realize oneself that messages on social media can, unintendedly, harm the image of an organization. Temping trusts that you deal responsibly with social media. Distribute therefore only work related content about your client by social media when they have given you permission to do so.

3 Quote from Temping's employee manual (2018).
4.4.3.2 Family and friends
Regarding the three primary examples of behaviours of employee engagement, Stay, Say and Strive (Hewitt, 2012), the interviewees perform very well. They like the company they are working for. They all say that they talk a lot about their firm on birthday parties and other social events and they are committed to the goals of the firm. Family and friends are informed about vacancies.

4.4.3.3 Business contacts
When the interviewees had a former career or work experience, they were willing to use their contacts in favour of the company they worked for. This led to new business in several cases. Also the former business network has led to business individuals who were willing to share their knowledge in favour of the company. The multiplex relations employees have, by being a member of a political party or a non-governmental organization (NGO), also led to useful business contacts in some cases.

<table>
<thead>
<tr>
<th>Social network</th>
<th>Employee/employer</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family &amp; Friends</td>
<td>2</td>
<td>“I came to work here because two of my friends were working at the call centre and they were very positive about the work and the company.”</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>“I introduced a friend of mine to the company and our recruiter hired him cause he fitted the profile.”</td>
</tr>
<tr>
<td>Business contacts</td>
<td>7</td>
<td>“I worked for a small firm before I started to work here and sometimes we can provide work for them as potential clients don’t directly fit our program or our workload is too high.”</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>“Within our company we organized some sessions about using our personal network in favour of the company and that helped us to find some new leads, but at the moment we’re not working in a structural way to really get the best out of our network.”</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>“In my case it works that I have a lot of contacts in the liberal party while I work with municipalities and these contacts often bring me in touch with important key-figures, so I can come easier in contact with the right persons.”</td>
</tr>
</tbody>
</table>

**Proposition 3A**
The positive association to the business makes employees successfully approach (former) business contacts to share their sources (knowhow, skills, network) with the company.
Proposition 3B
The positive association to the entrepreneurial company makes the employees share their work experiences with family and friends, leading in several cases to new employees for the company.

Proposition 3C
The positive association to the entrepreneurial company makes the employees use their personal network also to reach out successfully to new business opportunities.

4.5 Differences in approach B2C/B2B businesses
The employees in all firms are willing to use their social network to search for new employees. The former student entrepreneurs are able to motivate their employees to do so. In this case employees make use of their online social networks like Facebook and LinkedIn, but also of their network of family and friends and former business contacts.

In bringing on new business there are differences between Claim (B2C), Presentation (B2B) and Temping (mix of B2C/B2B). Employees of Claim talk a lot about their company with their relatives and everybody has somebody in their social network who has used their services.

In the case of Presentation they also talk about the company with their relatives and sometimes an employee of another company asks about their services and they often only hear these kind of answers:

“Sometimes people ask for your services and think they have an order for your company, but when you tell them about the estimated costs, then it appears they were not able to calculate the price-range we’re operating in already.” (Employee, Presentation)

Presentation and Temping also have employees that are involved in account management. In this case you see that these employees make use of their business network and are aware of the fact that a new client has to become a client of the company:

“You have to build a relationship with the company and not the person that is your contact over there, so that if you leave or your contact of the other firm leaves, the contact between the two companies stays intact.” (Employee, Temping)

Proposition 4A
In B2C companies it is more natural for an employee to win over a client than in a B2B
company, because the client can make a decision on his own account to place an order, employees that are positively associated to their company show this behaviour.

**Proposition 4B**

Account managers of B2B companies that are positively associated to their company seem to make use of their former business network or multiplex relations from, for example, political parties to win over clients for their company.

**Proposition 4C**

When maintaining the relations with clients of the company, employees of B2B companies need to realize that they have to bind these clients to their company and not to themselves.

4.6 Conclusions

Former student entrepreneurs are able to motivate their employees to use their social network in favour of the company by winning their trust and engage them in working for their company. They do so by communicating openly with their employees about the developments of the company, they show empathy with their employees and they inspire them with their behaviour. The researched cases also show that the entrepreneurs do not use the full potential of the social network of the employees and they do not want to put too much pressure on their employees to use their network, because they think this might be counter-productive.

In entrepreneurial firms a lot is expected from employees because each employee needs to address several issues at the same time and has close and personal contact with the founder (Vecchio, 2003). From this research we found that entrepreneurs who show genuine interest in their employees, creating a blame-free business environment and a relaxed atmosphere, with also moments to relax during business hours while having lunch together or being actively involved in sport activities, are able to motivate their employees to associate positively to their company. As a result of this, employees are willing to work hard and they open their social networks for the company to connect to new employees, information or even new clients.

Employees use their social network mostly by sharing vacancies and promoting their company by speaking positively about it on social occasions. This leads to new employees in all of the cases under scrutiny and also helps to create a positive image of the company. In the case of finding clients for the company it is easier for employees in a B2C company than in a B2B company to contribute. In B2B companies the barrier of entry for a client are more complex than in a B2C company. Therefore the owners themselves are important links to new clients. In B2B companies special employees are often recruited for account management. These employees
are crucial for expanding the client base of the company and use their business contacts actively to connect to new clients. In this case it is important that the employees find ways to bind clients to the company so that the continuation of the business is preserved.

The passion of the entrepreneur seems to be contagious and often motivates employees to make an extra effort. In the case of opening the social network of the employees it also seems to be the case that the sharing of news related to company or the need of the company for new employees is contagious. Not only when the founder of the company shares something on social media channels (like Facebook, Twitter, LinkedIn or Instagram) but also when engaged employees do so. In the case of sharing information about their clients on social media, at least one of the companies tells their employees to communicate their intentions with the involved customers.

Our findings are based upon a limited number of case studies. These findings are based upon research done in companies started by students during their bachelor or master studies. The results seem to be transferable to all cases in which young nascent entrepreneurs are involved in starting a company. Future research can improve the generalization of the results by developing the propositions into testable hypotheses based upon a larger sample of new ventures.
Chapter 5 Final conclusions and recommendations for future research

5.1 Introduction

The aim of this dissertation was to contribute to a better understanding of how social networks of entrepreneurs develop over time and how entrepreneurs persuade employees to use their social capital in favour of the company. Because the entrepreneurs in this case started from a venture creation program facilitated by the Amsterdam University of Applied Sciences, the role of the university in this process is also discussed.

Recent studies have researched the role of a social network in the case of the start of a new venture, the importance of the social network in the opportunity recognition phase, the role of the social network for obtaining resources and the role of the social network in order to gain legitimacy. In all these phases family, friends and fools (strong and weak ties) play an important role. A lack of longitudinal studies on the topic of social network development has been acknowledged by several scholars (e.g. Stuart & Sorensen, 2007). Since we had the privilege of witnessing the creation of many firms during a venture creation program initiated by the Amsterdam University of Applied Sciences in 2006, we were able to follow a couple of native ventures over a period of time during their start within the university and their development after graduation of the students in question. Doing so a unique set of data arose over the years, from which we could draw conclusions on the topic under research (Table 1.2). We grouped the knowledge gaps into three related themes (Figure 1.1) which were subsequently examined in the present dissertation.

The goal of this concluding chapter is to show the results of the empirical studies and how they contribute to a better understanding of the emerging literature about the way networks are shaped and the importance of networking over time (Newbert et al, 2013). The social network someone starts with does not seem to be crucial for being successful as long as networking capabilities are developed and new ties are kept on being added to the network. To achieve this objective, we will first discuss the key findings for each of the research themes. We will then synthesize the results of these findings by identifying their theoretical and practical implications. Finally, we will expose the main limitations of this dissertation and identify promising opportunities for future research.
5.2 Main research findings

In this section we will discuss the relation between the key findings of the chapters of this dissertation and their connection to each of the three research themes. Table 5.1 provides a summary of the main research findings. All these findings are related to the unique dataset that evolved over the years about the way student entrepreneurs built their social network over time (Table 1.2). The main research finding about the development of the social network of student entrepreneurs is that it is crucial to keep on developing a network over time to create a sustainable business. Student entrepreneurs who failed to reach out to former unknown business relations and failed to establish relations with them are not in business anymore.

*Theme 1: The influence of structural holes on the performance of student start-ups*

This first research theme answers the question about the influence of an external network on the success of a nascent company within a venture creation program at the university. An experiment with the companies involved in the program should point out if the student companies that were introduced to this external network, compared to a control group that were not introduced to this external network, would benefit from their expertise and profit from their resources in favour of their company, as predicted by the theory of structural holes (Burt, 1992). Because the optimal configuration considering strong and weak ties of a network in the early stage of development of a company is still an object of discussion, it seemed appropriate to research this topic by performing a unique experiment.

A key finding of this research is that the effect of a network with experts on the success of a company started within a venture creation program was negligible. In most of the cases the weak ties added to the company were not able to commit themselves and their resources to the companies under scrutiny. This outcome was quite surprising, as according to former research on this subject we would have expected that the companies under scrutiny would benefit from the connection to a network of experts (Stam, 2008; Ruda et al., 2009). One of the explanations for this result was that a large group of the student population had not yet decided if they were ready to continue with their company after the venture creation program had ended, due to study obligations. This made it hard for the experts to dedicate their time to these new ventures. Another conclusion was the inability of some of the students to follow up on the first introduction and to make an effort that would help the external relation stick to the new venture and dedicate resources to it. Due to an emphasis on the operational site of the business, these students forgot to reach out again to these connections and keep them involved in the process.
The uncertainty about the future of the company and the lack of follow-up attention by the students, was a reason for most of the external parties not to participate in the company, only advice was given about possible directions for the company. These findings once more showed the practical implications of a venture creation program (Mwasalwiba, 2010) and the necessity for the developers of these education programs to think about the development of the network skills of the students and to provide a possibility to facilitate students after the venture creation program ends, if it is the university's goal to help develop sustainable businesses.

Theme 2: The development of a company’s network over time by student entrepreneurs

This theme is the most central theme of this dissertation. The lack of longitudinal studies on the development of social networks of nascent entrepreneurs has been pointed out by many scholars (e.g. Stuart & Sorensen, 2007; Newbert et al., 2013; Stam et al., 2014). To address this theme we developed our own dataset. We gathered survey data of 495 students involved in a venture creation program (2009-2011) in order to find information about their background, entrepreneurial skills and competencies. We also gathered interview data of 165 student start-ups involved in a venture creation program (2009-2011) in order to find out how these start-ups developed during the program, interview data of 17 student start-ups were gathered over a period of three years (2010-2014) to find out how the social network of these start-ups developed after the program ended and we used interview data of 9 employees and 3 business owners about development of trust and deployment of social capital (2017) in order to find out in what way the social capital of employees contributes to the social network of the company. The conclusions based on these unique datasets (Table 1.2) form the anchor point of this research.

The role of strong ties became obvious in the first six months when the students were still participating in the venture creation program. Family and friends were able to help by financing first stock or equipment and provided services below market price (charging no or less rent for workplaces or asking no wages while helping to sell products). With this, this study contributes to former research on this topic (Witt, 2004; Hallen & Eisenhardt, 2012; Edelman et al., 2016). Student entrepreneurs that were ambitious and knew from the start that they were aiming at creating a sustainable business, already reached out for weak ties in this phase. They were also the ones that created free publicity and participated in business competitions as early as in this phase (Zott & Huy, 2007). These students also showed that they were able to communicate their message to different audiences and by doing so they expanded their network and credibility (Fisher et al., 2017; Kuratko et al., 2017). When pitching for an audience of government representatives they framed their message in a way it convinced the jury and when
in need of finance they used other methods to persuade bankers or private investors. Their work also made representatives of their international clients enthusiastic in such a way that they became ambassadors and introduced them to new prospects, bridging the hole between former unknown networks and getting a better reputation (Stam, 2008). By winning awards, they worked on their legitimacy, were able to finance their businesses and to reach out to yet unknown parties.

In the academic years 2009-2010 and 2010-2011, 165 companies were started during the venture creation program and registered with the Chamber of Commerce in the Netherlands. One year after the venture creation program, 17 companies (10%) were still active. Three years after the venture creation program only 7 companies (4%) were still up and running. The main reason the 10 (17-7) companies were discontinued during the period is that they were not able to reach out to new clients or business contacts (weak ties). An interesting observation in this period is that the founders of two of the companies that stopped in this period were employed by their first customer.

Of the seven remaining companies, three companies were providing an income for only the entrepreneur and four companies were able to pay salaries to several employees. The entrepreneurs of these companies were able to reach out to new contacts in the industry they worked in, while they were not afraid to ask for help, used their contacts with student associations and benefitted from the goodwill towards students in the business world. The university's network also helped these student entrepreneurs to get introduced to partners of importance and in some cases supported them with business assignments.

The fact that they had no problem to distinguish themselves from other businesses as young and passionate, and sometimes played the student card, helped them to survive and to grow their businesses into sustainable businesses. Sales and marketing professionals were sometimes so enthusiastic about their performance that they introduced them to new clients.

During the focus discussion we had in March 2018 with some of the student entrepreneurs about the conclusions of my dissertation, the owner of Claim told me that particularly in the first three years, after the creation of the company, they went to every business competition and were present at many formal and informal business meetings, to meet new people. They used the price money or in-kind services (like a free year rent for an office or business advice) to grow their company. Without these contributions they would not have survived. After three years they had an established business and they became pickier about which meetings to attend.
Nowadays the owner of Claim only visits business meetings after work or when he is sure he can meet with, for example, investors at a conference.

<table>
<thead>
<tr>
<th>Research theme</th>
<th>Structural holes</th>
<th>Network configuration</th>
<th>Network of the firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question</td>
<td>Does a network with unknown specialists give student entrepreneurs advantages in developing their business in comparison to students who are not introduced to this network?</td>
<td>How do student entrepreneurs develop their social network over time in order to grow their start-up into a sustainable business?</td>
<td>How do former student entrepreneurs convince their employees to use their social network in favour of the company?</td>
</tr>
</tbody>
</table>

### Key findings

- **Due to the fact that many students were not able to decide if they would go on with their venture after the venture creation program or that they spend most of their time operating their business, instead of networking, the effect of the network on the start-ups success was negligible.**

- **Student entrepreneurs depend mainly on strong ties during the venture creation program. Family, friends or the university are often launching customers or investors and play an important role in the opportunity recognition phase and the phase of obtaining resources.**

- **Universities offering venture creation programs should think about the conditions of these programs after the ventures are created to create more sustainable companies.**

- **The students that continued their company after the venture creation program had ended, had to keep on working on their social network in order to grow into a sustainable business.**

- **The role of broker between the students and parties of interest is important in the case of the university. Coaches with former business experience can play an appreciated role, although there is also a dark side to this involvement when student entrepreneurs get too much embedded in the university's network and forget to reach out to new relations outside of this network.**

- **The fact that student entrepreneurs created a lot of goodwill in the business world during business competitions helped them to reach out to partners of interest for the further development of their company. The fact that people in important marketing positions became ambassadors in some cases helped former student entrepreneurs to gain more legitimacy.**

- **Employees in entrepreneurial companies are more than willing to use their digital social networks to promote their company and help to seek new employees and other resources.**

- **The dedication and motivation to work for an entrepreneurial firm makes the employees vulnerable in a sense that they might overload themselves with work. The former student entrepreneur that anticipates on this issue wins over the trust of his employees.**

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Table 5.1
Summary of the main research findings
Theme 3: The network of the entrepreneurial firm and the role of employees’ social capital

The final theme is about the way the young entrepreneur influences the employees of the entrepreneurial company in order to persuade them to use their social capital in favour of the company.

Stuart & Sorenson (2007) set the agenda for research on entrepreneurship. One of the topics on this agenda was the difference between the ego network of the entrepreneur and the network of the firm, especially in the case of an entrepreneurial firm with employees. To address this topic we did a multiple case study on three companies that had been started by student entrepreneurs (two companies came out of the venture creation program and one was started during his studies by a former master student we met a couple of years ago).

The employees I interviewed were all in all very satisfied with the role the entrepreneurs played in the companies under scrutiny. The example given by the entrepreneur by showing his passion for the mission of the company and the way they were able to build a blame-free environment with complete transparency, motivated the employees to dedicate themselves to the companies in question. For most of the employees this was their first job, so it was hard for them to compare employers, but from the stories they heard from their peers who worked in other firms, they believed that they worked in by far the most inspiring businesses while being part of the family feeling. The employees with former business experience (mostly account managers) were also enthusiastic about the culture built within their firm and they used their professional and business network in favour of the entrepreneurial company. Research also showed that the use of the digital social network of the employees is nowadays one of the most important ways to reach out to new employees. The way employees post their stories on channels like Facebook, Twitter, LinkedIn and Instagram also helps a lot by building the brand of the company.

5.3 Contributions to the literature

This dissertation makes several contributions to the literature on entrepreneurial social networks, entrepreneurship education and human resource management.

First, the contribution to the field of entrepreneurial social networks. Recent studies have underscored the importance of developing a diverse network with weak and strong ties in order to benefit from this network in the phase of opportunity recognition, obtaining resources and gaining legitimacy (Elfring & Hulsing, 2003; Newbert et al., 2013; Rasmussen et al., 2015).
Because longitudinal research in this field was limited, this research has contributed to the insight in the way entrepreneurial networks develop over time, particularly because a unique dataset developed during this research. The data showed us that it is crucial for an entrepreneur to keep on developing his social network in order to create a sustainable business. By concluding this, the current study contributes to emerging literature on the importance of network development (Newbert et al., 2013). Students that failed to reach out to unknown business contacts (weak ties) because they were too busy with their operations could not turn their start-up into a sustainable business. Students especially profited from the goodwill towards them and the contacts made while participating in business contests. This once more emphasises the importance of developing communication skills while networking (Lee and Jones, 2008). Over time their performance drew ambassadors from international companies that were willing to introduce them to new clients, this role transformation is a contribution to recent work on this topic (Rasmussen et al., 2015).

Second, this study has contributed to our insight in the working of the structural hole theory (Burt, 1992) on this special occasion and by conducting a unique experiment within a venture creation program of the university. This experiment has shown that to connect to people outside of your own social circle when reaching out for resources to back up your entrepreneurial company, some conditions have to be met. As people are not willing to invest blindly in an idea or opportunity, you have to convince them of your perseverance and willingness to put effort in pursuing this opportunity. The development of your communication skills and the way you talk to different parties when you want to involve them in the development of your company to gain more legitimacy contributes to earlier research on this topic (Fisher et al., 2017). This experiment shows that some preconditions have to be met in order to introduce representatives of a nascent company to unknown specialists with access to resources of importance for the company in question (Kuratko et al., 2017). In the case of student entrepreneurs, one of the boundary conditions for a successful introduction is that they have to be sure about their motivation to continue their business after the venture creation program.

Third, this study has contributed to the literature about entrepreneurship education and particularly about venture creation programs. This specific field is quite young and a lot of insight can be gained through the methods used and their results and the preconditions that have to be met in order to make these programs more successful in terms of delivering viable businesses (Lee & Jones, 2008; Mwasalwiba, 2010; Moberg, 2014; Lackéus et al., 2015; Rasmussen et al., 2015). To this line of research this study contributed by pointing out the
conditions that have to be met (like allowing students to be an intern in their own company after the venture creation program) before students can be successfully introduced to external parties outside of the university. The embeddedness of the students in the network of the university can play a negative role in this respect. Students that are supported by the university as their launching customer have to be aware that this is just a springboard to the next phase in which they have to reach out to connections in the industry they are working for. When they forget to do so, because they are busy with their operations, the end of the contract with the university can mean the end of the company. This observation is also a contribution to the literature on the topic of bridging structural holes to reach out to parties that are not part of the network you are embedded in (Stam, 2008).

Fourth, this dissertation contributes to the theory on social networks by addressing a gap in the literature mentioned by Stuart & Sorensen (2007) about the difference between the ego network of the entrepreneur and the network of the firm. This research shows that the social capital of the firm grows over the years. Not only by the social capital added by the entrepreneur but also by the employees in his firm. A condition for the employee to do so is that the entrepreneur is able to create a blame free environment in which the employee can flourish and contribute to the mission of the company. The researched cases also showed that the entrepreneurs do not use the full potential of the social network of the employees and hesitate to ask their employees to use this network.

5.4 Practical implications
In addition to implications for theory, this research also offers several practical implications. In particular for the field of higher education where more and more students are encouraged to act entrepreneurially, this dissertation can be a source of inspiration and guidance.

First, this research reveals a difference in approach between the way the university deals with entrepreneurship initiated as a consequence of patented findings by universities employees and non-patented initiatives of students. For the patented based findings a hole infrastructure has been developed over time with Technology Transfer Offices (TTOs), incubators and other services. The non-patented initiatives are mostly started by students during college or during venture creation programs at universities of applied sciences. Students develop new services, new products (clothing, food, jewellery, furniture, etc.) and participate in trading. Often the venture creation programs are not embedded in an infrastructure that keeps on supporting the successful business started during these programs and the students are left to their own device and have to find out for themselves how to carry on. This sometimes results in them quitting
their studies. Because the interest in starting your own company has grown and not only from students from business studies, universities are forced to think about this growing group of students who are interested in entrepreneurship. This dissertation shows the need for consideration on a strategic level to make it possible for students to continue their businesses by developing the possibilities to graduate in their own company and to give students room for skipping classes or rescheduling exams when their businesses ask for this kind of adjustments, so that they are able to work on their company and also finish their bachelor studies. By communicating these measures to the students, it will help them to decide if they want to continue their business after a venture creation program of the university.

Second, this dissertation helps teachers and coaches of student entrepreneurs to prepare them for meetings with supporters from outside the university. By preparing the meetings and by managing the expectations of both students and external supporters, wasting time can be prevented. Although the goodwill towards students that start their own company is huge, investors and other resource providers do not have the intention to invest time and money in endeavours to which the parties involved are not fully committed.

Third, this dissertation can be an inspiration for prospective student entrepreneurs, who can learn from the cases presented in this dissertation and come to an understanding of the efforts that have to be made when starting your own business, in particular in reaching out to unknown individuals or representatives of companies. Joining a venture creation program can help these students to create the right attitude and to find out if entrepreneurship is what they really like.

5.5 Limitations and future research directions

Although the findings of this study are informative, there are several limitations that point to future research.

First, the unique experiment within a venture creation program, at the university, to find out the influence of a group of specialists on the development of early staged entrepreneurial ventures in order to add more insights to the theory about the influence of structural holes upon an entrepreneurial venture (Burt, 1992), might be repeated with a more mature group of entrepreneurial ventures to see what happens if the motivation of the founders is clear and the first hurdles about the idea development have been taken. This might probably lead to different conclusions about the attachment of external resource suppliers (like investors or consultants) to the nascent company and the effect on their development.
Second, the insights developed by this dissertation about the embedding of several measures to improve the chance of creating sustainable businesses by a redesign of the universities' curriculum (like making it possible for students to graduate in their own company or get special privileges in order to combine their studies with the development of their own company), might lead to a higher success rate (in this case from the initial 165 started companies only 7 (4.2%) survived over a period of three years). This might lead to several possibilities in research to find out how effective certain changes in the curriculum are and what kind of interventions are needed to come to more acceptable results. The question in this case is also what the intentions of the university are. A curriculum has already been designed (in several countries over the world) in the economic domain to educate students who want to become small business owners. But this excludes students from other faculties, and as the call for interdisciplinary approaches grows, this asks for a different approach towards the future.

Third, this research was conducted about the physical social network of student entrepreneurs, nowadays a lot of linking is being done through digital social networks like LinkedIn and Facebook. During this research I was also confronted with the fact that many students used platforms like www.durftevragen.nl, www.meetup.com or local and regional entrepreneurship platforms where they were able to post questions, get answers, but also made appointments with others for real life contact. The importance of these digital meeting places is something I did not include in this dissertation, but it is an interesting field for research in the years to come.

Fourth, qualitative research on the involvement of employees in the network of entrepreneurial firms has been done. This research has been done in a small sample of entrepreneurial companies and resulted in some propositions about the way employees use their social network in favour of the company. Hypotheses can be derived from these propositions that could be tested in larger samples of entrepreneurial companies in order to validate these findings.

Fifth, this dissertation started with a quote from Harari's book (2017) about the role of gossip in social networks and the critical mass of 150 persons that could be controlled by the management of a group. The entrepreneurial enterprises examined in this dissertation did not yet have the same size, but in a couple of years they might have grown into a company of over 150 employees. It would be quite interesting to find out what happens after the company has reached this number of employees and would also be an interesting topic for scholars to research in the future.
5.6 Conclusion

This study was about the development of the social network of student entrepreneurs over time, the way the university contributed to this network by introducing students to their relations, the contribution of the resources of specialists to this network and the way the social capital of employees contributes to a firm’s social network. The study has shown that it is hard for students to expand their network of family and friends in order to get access to resources from external parties. The student entrepreneurs that succeed in building this bridge are the ones that also build a sustainable venture over time. On their path to this success they show that they are able to gain resources below market prices by bartering their services for, for example, office space, they also gain momentum by winning awards and creating free publicity, they use the network of the university to get introduced to partners outside of their network and by not being afraid to ask for help and profit from the goodwill students have in the business world.

The experiment with a network of specialists introduced to a part of the students in a venture creation program, while the other students were not introduced to this network, showed that this intervention had no significant effect on the development of the companies started by these students. One of the main reasons the specialists did not invest their time or resources in the nascent student ventures was that a large group of the students were not able to convince the specialists of their dedication to the venture in the making. This led to the conclusion that the way of communicating about a business is of great importance to get access to new resources and gain legitimacy. Universities that offer venture creation programs to students also need to consider how they can enable the students to combine working in their company while graduating, if the aim of the university is to contribute to the economy by helping build sustainable businesses.

The final stage of this study was about employees’ willingness to use their social network in favour of the entrepreneurial firm they were working for. The way the former student entrepreneurs created an atmosphere over time that motivated these employees to do so was heart-warming to see. Considering the fact that the popularity among students of starting their own firm has not diminished yet, this dissertation can inspire other scholars to set up research that measures the effect of interventions in order to stimulate entrepreneurship at universities!
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Summary

With a little help from my friends

A study about the development of the social network of student entrepreneurs during and after an educational venture creation program.

Over the last years the popularity of entrepreneurship among students has risen substantially. More and more students at universities of applied sciences view starting their own business as a serious alternative to working for a large corporate. Several universities of applied sciences therefore offer education in the field of entrepreneurship and also allow students to start their own business during their studies (Mwasalwiba, 2010; Vanevenhoven & Drago, 2015; Lackéus M. & Williams Middleton K., 2015). In the Netherlands, the services of the Young Entrepreneurship Foundation are often used in this field of education and the companies that have started are often liquidated within a year, immediately after the program has ended. In these companies, therefore, the trade of products is the main topic of interest. This form of education is regularly applied in the first or second year of a bachelor's degree in the economic sector (Hoogendoorn et al., 2011). Within these programs, teamwork is often the central point of interest and not the start of your own company.

More and more universities of applied sciences allow students to start their business during venture creation programs, in the third and fourth year of their bachelor education (Stam, 2014). In these programs companies are started and registered with the Chamber of Commerce. These companies are often related to a service, food and drink, clothing & accessories, trade, and the development of a product. These companies are also often wound up after the program. Given the fact that this was very frustrating for some students and also led to early school leaving, universities of applied sciences started looking for methods to guide students in combining their own company and obtaining a bachelor's degree. In 2017, this even led to the drafting of a memorandum of understanding by the Association of Universities of Applied Sciences and the Dutch Government initiative Start-up Delta to stimulate the start of companies in universities of applied sciences (de Graaf & Constantijn van Oranje, 2017).

Since activating your social network to get support for your company is one of the most important success factors when starting your own business (e.g. Larson & Starr, 1993; Elfring and Hulsing, 2003; Newbert et al., 2013) and students are still fully engaged in the development of their business network in particular, this topic seemed to lend itself perfectly to doing research. Extensive research into the literature in this area yielded a number of issues that have
been underexplored to date and were therefore worth investigating. Stuart & Sorensen (2007), in their exploration of the gaps in the literature on social networks, in the context of starting their own business, indicated that there was a particular need for longitudinal studies on the development of networks and that there still was a lot of uncertainty about the difference between the social network of the entrepreneur and that of a company with various employees. Several researchers confirmed this analysis (e.g. Newbert et al, 2013; Lamine et al., 2015; Lans, Blok & Gullikers, 2015). This led to the following problem definition for this dissertation:

*How do student entrepreneurs develop their network over time in favour of the new ventures they create and how do they motivate their employees to use their social capital in favour of the company they work in?*

In order to further investigate this problem, three separate sub-questions have been formulated which have subsequently been answered using quantitative and qualitative methods.

**Theme 1: A network of external specialists**

Entrepreneurship connects networks that had not previously been connected (Schumpeter, 1934, Granovetter, 1973; Burt, 1992). Having connections outside the circle of family and friends can mean an introduction to new knowledge and that other sources, for example in the field of financing, are made accessible. Companies that structurally occupy strategic positions with which they reduce the gap with other industries appear to have better access to new knowledge in practice, identify more opportunities in the market and enjoy a higher reputation in the outside world (Stam, 2008). The operation of this theory has been extensively described by Burt (1992) in his work on structural holes in a network. What consequences this has for practice is not always clear, which is why the following question was formulated:

*Does the introduction to a network of specialists give student entrepreneurs an advantage in the development of their company compared to student entrepreneurs who are not introduced to this network?*

**Theme 2: The development of a social network over a longer period of time**

Researchers recently made the following statement: "What remains a challenge in studies concerning students starting an enterprise during an educational program is the dependency on research based on a snapshot, instead of data that is available over a longer period of time, even after the end of their school education, collected by the researcher himself" (Lans et al., 2015).
2015: 460). Given the fact that we had the opportunity to follow student entrepreneurs for a longer period of time, the following question was formulated:

*How do student entrepreneurs develop the social network of their company in the making so that their company can eventually grow into a sustainable company?*

**Theme 3: Establishing the social network of a company and the role of the employees in this**

In many studies the personal network of the entrepreneur is taken as the starting point for drawing conclusions about network development. At a flourishing company, more and more employees start to work in the course of time. What does this mean for the social network of the company? Are employees using their social capital for the company? If so, under which conditions does this happen and what is the role of the entrepreneur in this process? (Stuart & Sorensen, 2007). These questions led to the formulation of the following research question:

*How do former student entrepreneurs convince their employees to use their social capital in favour of the company?*

**Research design**

The research was done in the academic years 2009-2010 and 2010-2011. During this period 495 students were enrolled in a venture creation program at the Amsterdam University of Applied Sciences and 165 companies were started and registered with the Chamber of Commerce. On 1 June 2012, 17 of these 165 companies were still active. These 17 companies were approached for a follow-up study and were interviewed annually until 1 June 2015, when only 7 companies were still up and running. In 2017, two of these companies and a third company of a former student who had also started a business during his study were examined in the context of the use of the social capital of their employees.

Various research methods were used during this research. The 495 students were subjected to quantitative research via a survey, in which questions were asked to map out their entrepreneurial competencies and to find out whether, for example, there were entrepreneurs in their family and whether or not they had gained any work experience. The questionnaire was based on a previously validated list from the study of Hoogendoorn et al. (2011). The students completed the questionnaire at the beginning of the venture creation program and at the end of the program, so that any effects of the program on the development of the entrepreneurial
competences could be measured. The results of this survey were processed in the software program Stata and used for, among other things, making regression analyses.

During the program, a unique experiment was carried out in which 50% of the companies were brought into contact with a network of external specialists and the other companies did not see these people. This was to measure whether the use of an external network of specialists unknown to the students had an effect on the results of the companies concerned.

At the end of the venture creation program of six months, the students were also subjected to qualitative research by answering a structured questionnaire asking for the team composition of the company, the mutual cooperation during the period, the achieved results, in terms of turnover, costs, investments, etc. and the people with whom they worked together during this period for their own company. These questionnaires were modulated to previous questionnaires used in the research of Davidson and Honig (2003) and Bhagavatula et al. (2010). In total, all 165 companies from this period were interviewed (approximately 5000 minutes of interviews). The results of the interviews were processed directly in Excel by the researcher and a student assistant and later included in the software program UCINET to make statements about the composition of the network (the size of the network, the average strength of a connection (strong, weak ties) and the density of the network (just family and friends or also external business partners).

The 17 companies that continued after the venture creation program were also subjected to a quantitative study in which the questions about the results of the company were repeated and the changes in the network were mapped. We also asked about the way in which certain contacts were approached and how the relationship worked. These interviews were processed on site in Excel sheets or were recorded and later worked out for the dissertation. Every year the former student entrepreneurs were interviewed and in addition press material about the companies was collected. This material ensured that the researcher was able to gain insight into the ins and outs of the companies via triangular measurements (Yin, 1984; Zott & Huy, 2007). The students were also followed if they had to present themselves during business competitions and meetings were attended because of, for example, a move to a new location or reaching a certain milestone. The conclusions of this research were also discussed in a focus group of four entrepreneurs out of this group to see whether they recognized themselves in the conclusions drawn.

In 2017, three companies of (former) students with between 20-100 employees participated in qualitative research into the contribution that employees make to the social network of the
company and the influence that the entrepreneur exercises on the employees' behaviour in this area. In total, 12 people (the entrepreneur and 3 employees per company) were interviewed for this study on the basis of a semi-structured interview (385 minutes of material in total). All interviews were recorded and later elaborated via a list of subjects on the basis of which elements from the interviews were brought together to arrive at an overview of related statements. The software program MaxQda was used for this.

Main results

The empirical research has yielded some interesting results. These will now be briefly discussed per research theme.

Theme 1: A network of external specialists

During the venture creation program 50% of the companies were introduced to external specialists in the field of marketing and financing or another expertise of importance for the firm in question. The analysis of the effect of this interference in the business operations of the students in question led to the conclusion that the companies in question did not perform significantly better than the companies that were not introduced to this network. The external experts were interviewed afterwards about the contacts with the students. As the main reason for external professionals not to use their resources for the companies concerned, it was stated that most of the students in question did not know whether they would continue with their business after the entrepreneurship program ended. The effect of the use of these so-called 'structural holes' in the network was negligible due to the lack of commitment of the students because their first priority was finishing their bachelor education.

Theme 2: The development of a social network over a longer period of time

During the entrepreneurship program and several years afterwards, students were followed and interviewed about the development of their network. This research showed that during the program the role of family and friends was very important. They provided services below the prevailing market price by, for example, cooperating voluntarily in the company, providing free business space, acting as a launching customer, helping to finance the first working capital and providing emotional support. Companies that continued after the entrepreneurship program had to extend further to new business contacts and increase their brand awareness by realizing free publicity and/or winning prizes. After becoming acquainted with the relevant parties, they also had to bind them by making follow-up appointments. The student entrepreneurs who were not
able to take this step towards the market had to liquidate their company over time. The student entrepreneurs who managed to set up a sustainable company have benefited from, among other matters, the goodwill of companies towards student entrepreneurs, have had no trouble with asking for help and because of the way they had put their company on the market won over the trust of customers and suppliers.

The University of Applied Sciences has in many cases been able to play a mediating role (brokerage) for the students by introducing them to stakeholders from their own network, mostly the municipality, banks and consultancy companies. This has helped a number of student entrepreneurs. The university has also acted as launching customer in various cases. In these cases, the downside of this involvement also came to the fore, because in these cases student entrepreneurs were unable to extend themselves to new customers as they were too busy running their business. This emphasizes the other side of being embedded in a certain network and focusing only on the operational side of the business.

Theme 3: Establishing the social network of a company and the role of the employees in this

This study showed that employees of entrepreneurial companies use their social capital in favour of the company without question. In all cases we met an enthusiastic population of young people (often their first contact with the business community) who were inspired by the entrepreneurs in question and felt at home in the transparent and safe environment of the company. The fact that there was a joint responsibility for the result and that mistakes were simply accepted, made employees happy to search in their network for new employees, potential customers or knowledge in the form of new developments in the market. In all these efforts, social media such as Facebook, Twitter, LinkedIn and Instagram were also used to achieve these goals.

Contributions from the research

This research has contributed to the literature in the field of entrepreneurship, social networks, entrepreneurship education and Human Resource management.

Firstly, recent studies have shown that it is important for an entrepreneur to develop a social network that consists of family, friends and business relationships. This network is important for starting entrepreneurs in discovering opportunities in the market, gaining access to investors and acquiring legitimacy (Elfring & Hulsing, 2003; Newbert et al., 2013; Rasmussen et al.,
2015). However, there is a shortage of research on the development of networks over a longer period of time. This dissertation thus contributes to solving this shortage and in particular provides insight in the development of the social network of student entrepreneurs who still have to start developing their business network. This has been done by developing several new datasets over a period of five years.

Secondly, this research contributes to the understanding of networking by carrying out a unique experiment in the field of the structural hole theory (Burt, 1992). The importance of strong motivation to convince an external party to commit resources is once more emphasized by this research.

Thirdly, this research contributes to the relatively new research field of entrepreneurship education with regard to programs in which students are encouraged to start their own company (Lee & Jones, 2008; Mwasalwiba, 2010; Moberg, 2014; Lackéus et al., 2015; Rasmussen et al. 2015). This research shows that it is of great importance for universities and universities of applied sciences to consider the consequences of stimulating students to start up their own companies during their studies (see also remarks in the paragraph about practical implications).

Fourthly, this research contributes to the human resource literature and the literature in the field of social networks, due to the fact that the deployment of the social network of employees for the company is discussed. This study shows that (former) student entrepreneurs are able to create a business climate in which employees are fully motivated to use their social capital for the benefit of the company. It also raises the question if the entrepreneurs are aware of the possible contribution the social capital of their employees can provide to their company. The use of social media in favour of the company also appears to help the company in achieving new employees, customers and new insights. In this dissertation, the question of Stuart & Sorensen (2007) about the composition of the social network of a company as well as the network of the entrepreneur and his employees is also answered.

**Practical implications**

In practical terms, this dissertation provides suggestions for entrepreneurship education at universities of applied sciences to also look at the preconditions associated with this stimulus in the case of education where students are encouraged to start their own business. Where universities and universities of applied sciences have already built up an entire infrastructure to exploit inventions based on patents through Technology Transfer Offices and incubators, students who market non-patented findings are often left to their own device. This leads in some
cases to the premature departure from the university or university of applied sciences. Offering students the opportunity to graduate on their own company or to tailor their study curriculum to their needs, for example by the possibility of taking examinations at other times, could be steps in the right direction.

Building a social network also deserves extra attention in education at universities of applied sciences and universities. In this dissertation a number of cases are discussed in which the construction of a social network plays a role. These cases can be shared with students for illustration purposes and underline the importance of a social network in general and for entrepreneurs in particular.

Conclusion

The reason for this dissertation was the lack of clarity about building a social network by student entrepreneurs and the factors that play a role in this. During the period of this research (2009-2018) a unique dataset were developed on which the conclusions of this research are based. Through this research, the insight into how student entrepreneurs build up their social network and what role family, friends and external relations play in this process increased. Several hypotheses have been included in the dissertation that can be further tested in practice and give reasons for further research. This research once again made it clear that entrepreneurship is embedded in a web of social relations and networks and that entrepreneurs who are unable to enter into lasting contacts with previously unknown business relationships cannot survive in the long term.

Oh, I get by with a little help from my friends
Mm, gonna try with a little help from my friends
Oh, I get high with a little help from my friends
Yes, I get by with a little help from my friends
With a little help from my friends

(1967, Lennon & McCartney)
Summary (in Dutch)

Met een beetje hulp van mijn vrienden.

*Een studie naar de ontwikkeling van het sociaal netwerk van student ondernemers tijdens en na een educatief programma voor het starten van een eigen bedrijf (minor ondernemerschap).*

De afgelopen jaren is de populariteit van ondernemerschap onder studenten enorm gestegen. Steeds meer hogeschoolstudenten zien het starten van een eigen onderneming als een serieus alternatief t.o.v. het werken bij een grote corporate (Van der Steen et al., 2012). Meerdere hogescholen bieden dan ook onderwijs aan op het gebied van ondernemerschap en laten ook studenten tijdens hun studie starten met hun eigen bedrijf (Mwasalwiba, 2010; Vanevenhoven & Drago, 2015; Lackéus M. & Williams Middleton K., 2015). In Nederland wordt bij dit onderwijs veelal gebruik gemaakt van de diensten van de stichting Jong Ondernemen en worden de gestarte bedrijven veelal meteen geliquideerd na afloop van het programma (met een looptijd van maximaal een jaar). In deze bedrijven wordt dan ook voornamelijk handel gedreven. Deze vorm van onderwijs wordt regelmatig toegepast in het eerste of tweede jaar van een bacheloropleiding in de economische sector (Hoogendoorn et al., 2011). Binnen deze programma's staat vaak teamwerk centraal en niet het starten van een eigen bedrijf.

Steeds meer hogescholen staan in het 3e en 4e jaar van de bacheloropleiding studenten toe om hun bedrijf te starten tijdens minor programma's ondernemerschap (Stam, 2014). In deze programma's worden bedrijven gestart en ingeschreven bij de kamer van koophandel. Deze bedrijven zijn vaak gerelateerd aan een dienst, eten en drinken, kleding & accessoires, handel en de ontwikkeling van een product. Ook deze bedrijven worden vaak geliquideerd na afloop van het programma. Gezien het feit dat dit voor sommige studenten erg frustrerend was en ook leidde tot vroegtijdig schoolverlaten, zijn hogescholen op zoek gegaan naar methoden om studenten te begeleiden bij het combineren van een eigen bedrijf en het behalen van een bachelor diploma. In 2017 heeft dit zelfs geleid tot het opstellen van een memorandum van overeenstemming door de Vereniging Hogescholen en StartupDelta om het starten van bedrijven in hogescholen te stimuleren (de Graaf & Constantijn van Oranje, 2017).

Aangezien het activeren van je sociale netwerk voor het verkrijgen van steun bij je onderneming een van de belangrijkste succesfactoren is bij het starten van je eigen bedrijf (bijv. Larson & Starr, 1993; Elfring en Hulsing, 2003; Newbert et al., 2013) en studenten nog volop bezig zijn met het ontwikkelen van vooral hun zakelijke sociale netwerk leek dit onderwerp zich uitstekend te lenen voor het doen van onderzoek. Een uitgebreid onderzoek naar de literatuur op dit gebied leverde een aantal zaken op die
tot op heden onderbelicht waren en dus de moeite waard om te onderzoeken. Stuart & Sorensen (2007) gaven in hun verkenning naar de gaten in de literatuur op het gebied van sociale netwerken, in de context van het starten van een eigen bedrijf, aan dat er vooral behoefte was naar longitudinale studies over de ontwikkelingen van netwerken en dat er nog veel onduidelijkheid was over het verschil van het sociale netwerk van de ondernemer en dat van het bedrijf met diverse werknemers. Meerdere onderzoekers bevestigden deze analyse (bijv. Newbert et al., 2013; Lamine et al., 2015; Lans, Blok & Gullikers, 2015). Dit leidde tot de volgende probleemstelling voor deze dissertatie:

_Hoe ontwikkelen student ondernemers hun netwerk door de tijd heen ten faveure van de bedrijven die ze creëren en hoe motiveren ze hun medewerkers na verloop van tijd om hun sociale kapitaal in te zetten ten gunste van de onderneming in kwestie?_

Om deze probleemstelling verder te onderzoeken zijn er drie separate sub-vragen opgesteld die vervolgens via kwantitatieve en kwalitatieve methoden beantwoord zijn.

**Thema 1: Een netwerk van externe specialisten**

Ondernemerschap verbindt netwerken die nog niet eerder met elkaar verbonden waren (Schumpeter, 1934; Granovetter, 1973; Burt, 1992). Het hebben van connecties buiten je kring van familie en vrienden kan betekenen dat je geconfronteerd wordt met nieuwe kennis en dat andere bronnen, bijv. op het gebied van financiering, zich kunnen ontsluiten. Bedrijven die structureel strategische posities innemen waarmee ze het gat met andere industrieën verkleinen blijken in de praktijk betere toegang te hebben tot nieuwe kennis, identificeren meer kansen in de markt en genieten een hogere reputatie in de buitenwereld (Stam, 2008). De werking van deze theorie is uitgebreid beschreven door Burt (1992) in zijn werk over structural holes in een netwerk, wat voor gevolgen dit voor de praktijk heeft is niet altijd even duidelijk, vandaar dat de volgende vraag geformuleerd is:

_Geef de introductie tot een netwerk van specialisten student ondernemers een voorsprong bij de ontwikkeling van hun onderneming ten opzichte van student ondernemers die niet in dit netwerk geïntroduceerd worden?_
Thema 2: De ontwikkeling van een sociaal netwerk over een langere periode

Recentelijk kwamen onderzoekers tot het volgende statement: “Wat een uitdaging blijft in studies betreffende studenten die tijdens een educatief programma een onderneming starten is de afhankelijkheid van onderzoek gebaseerd op een momentopname, in plaats van data die over een langere periode, ook na het beëindigen van hun opleiding, door de onderzoeker zelf verzameld zijn.” (Lans et al., 2015:460). Gezien het feit dat de gelegenheid voorhanden was om student ondernemers voor een langere tijd de volgen werd de volgende vraag geformuleerd:

_Hoe ontwikkelen student ondernemers het sociale netwerk van hun bedrijf in wording zodat hun bedrijf op termijn kan uitgroeien tot een duurzame onderneming?_

Thema 3: Het tot stand komen van het sociale netwerk van een bedrijf en de rol van het personeel in deze

In veel onderzoeken wordt het persoonlijke netwerk van de ondernemer als uitgangspunt genomen voor het trekken van conclusies over netwerkontwikkeling. Bij een florerend bedrijf gaan na verloop van tijd steeds meer werknemers aan de slag. Wat heeft dit tot gevolg voor het sociale netwerk van het bedrijf? Zetten werknemers hun sociale kapitaal in voor de onderneming? Zo ja, onder welke voorwaarden gebeurt dit dan en wat is de rol van de ondernemer in dit proces? (Stuart & Sorensen, 2007). Deze vragen leidde tot de formulering van de volgende onderzoeksvraag:

_Hoe overtuigen (voormalig) student ondernemers hun werknemers om hun sociaal kapitaal in te zetten ten gunste van de onderneming?_
Onderzoeksopzet


Gedurende het onderzoek zijn verschillende onderzoeksmethoden gebruikt. De 495 studenten zijn via een survey aan een kwantitatief onderzoek onderworpen, waarbij vragen gesteld zijn om hun ondernemende competenties in kaart te brengen en uit te vinden of er bijvoorbeeld in hun familie ondernemers voorkomen en of ze al dan niet werkervaring hebben opgedaan. De vragenlijst was gebaseerd op een al eerder gevalideerde lijst uit het onderzoek van Hoogendoorn et al. (2011). De studenten hebben de vragenlijst aan het begin en aan het eind van het programma ingevuld zodat eventuele effecten van het programma op de ontwikkeling van de ondernemende competenties gemeten konden worden. De resultaten van deze survey zijn verwerkt in het software programma Stata en onder andere gebruikt voor het maken van regressie analyses.

Tijdens het programma is er ook een uniek experiment uitgevoerd waarbij 50% van de bedrijven in contact gebracht werden met een netwerk van externe specialisten en de andere bedrijven kregen deze mensen niet te zien. Dit om te meten of de inzet van een extern netwerk van voor de studenten onbekende specialisten effect heeft op de resultaten van de betreffende onderneming. De studenten zijn aan het einde van het minor programma van een half jaar ook onderworpen aan een kwalitatief onderzoek door het beantwoorden van een gestructureerde vragenlijst waar gevraagd werd naar de teamsamenstelling van het bedrijf, de onderlinge samenwerking gedurende de periode, de geboekte resultaten, qua omzet, kosten, investeringen, enz., en de mensen waarmee ze deze periode hebben samengewerkt ten behoeve van hun eigen onderneming. Deze vragenlijsten zijn gemoduleerd naar eerdere vragenlijsten gebruikt in het onderzoek van Davidson en Honig (2003) en Bhagavatula et al. (2010). In totaal zijn alle 165 bedrijven uit deze periode ondervraagd (circa 5000 minuten aan interviews). De resultaten van de interviews zijn direct in Excel verwerkt door de onderzoeker en een student assistent en later o.a. verwerkt in het software programma UCINET om uitspraken te doen over
de samenstelling van het netwerk (de grootte van het netwerk, de gemiddelde sterkte van een verbinding (strong ties, weak ties) en de dichtheid van het netwerk (alleen maar familie en vrienden of ook externe business partners).

De 17 bedrijven die na het minorprogramma doorgingen zijn ook onderworpen aan een kwantitatief onderzoek waarbij de vragen over de resultaten van het bedrijf zijn herhaald en ook de veranderingen in het netwerk in kaart zijn gebracht. Tevens is er gevraagd naar de manier waarop bepaalde contacten benaderd zijn en hoe de relatie verder heeft gewerkt. Deze interviews zijn ter plekke verwerkt in Excel sheets of zijn opgenomen en later uitgewerkt voor de dissertatie. Jaarlijks zijn de voormalig student ondernemers geïnterviewd en daarnaast is er persmateriaal over de bedrijven verzameld. Dit materiaal zorgde ervoor dat de onderzoeker in staat was om via driehoeksmetingen te komen tot inzicht in het reilen en zeilen van de ondernemingen (Yin, 1984; Zott & Huy, 2007). Tevens zijn de studenten gevolgd als ze zich moesten presenteren tijdens business competitions en zijn er bijeenkomsten bezocht ter gelegenheid van bijvoorbeeld een verhuizing naar een nieuwe locatie of het bereiken van een bepaalde mijlpaal. De conclusies naar aanleiding van dit onderzoek zijn ook voorgelegd aan een focusgroep van een viertal ondernemers (uit de gevolgde groep) om na te gaan of ze zich herkenden in de getrokken conclusies.

In 2017 is er bij 3 bedrijven van (voormalige) studenten met tussen de 20-100 werknemers kwalitatief onderzoek gedaan naar de bijdrage die werknemers leveren aan het sociaal netwerk van het bedrijf en de invloed die de ondernemer uitoefent op het gedrag van de werknemers in dezen. In het totaal zijn er voor dit onderzoek 12 personen (de ondernemer en 3 werknemers per bedrijf) geïnterviewd op basis van een semigestructureerd interview (in totaal 385 minuten aan materiaal). Alle interviews zijn opgenomen en later uitgewerkt via een lijst met onderwerpen op basis waarvan elementen vanuit de interviews bij elkaar gebracht zijn om te komen tot een overzicht van bij elkaar behorende uitspraken. Een panel van docenten heeft geholpen bij het selecteren van de meest relevante uitspraken. Hiervoor is onder andere gebruik gemaakt van het softwareprogramma MaxQda.
Belangrijkste resultaten

Het empirisch onderzoek heeft enkele interessante resultaten opgeleverd. Deze zullen nu kort besproken worden per onderzoeksthema.

Thema 1: Een netwerk van externe specialisten

Gedurende de minor ondernemerschap werd 50% van de bedrijven geïntroduceerd aan externe specialisten op het gebied van marketing en financiering of een andere expertise van belang voor de firma in kwestie. De analyse van het effect van deze inmenging in de bedrijfsvoering van de studenten in kwestie leidde tot de conclusie dat de bedrijven in kwestie niet significant beter presteerden dan de bedrijven die niet bij dit netwerk geïntroduceerd waren. De betreffende specialisten werden na afloop gevraagd naar hun ervaringen met de studenten ondernemers. Als belangrijkste reden voor externe professionals om hun resources niet voor de betreffende bedrijven in te zetten werd gegeven dat de meeste van de studenten in kwestie niet zeker wisten of ze wel zouden doorgaan met hun bedrijf als het ondernemerschap programma beëindigd was. Het effect van de inzet van de externe experts in het netwerk bleek door het ontbreken van commitment om het bedrijf voort te zetten te verwaarlozen.

Thema 2: De ontwikkeling van een sociaal netwerk over een langere periode

Studenten werden tijdens het ondernemerschapsprogramma en meerdere jaren daarna gevolgd en geïnterviewd over de ontwikkeling van hun netwerk. Uit het onderzoek bleek dat tijdens het programma de rol van familie en vrienden zeer belangrijk was. Zij leverden diensten onder de geldende marktprijs door bijvoorbeeld vrijwillig mee te werken in het bedrijf, gratis bedrijfsruimte ter beschikking te stellen, te fungeren als launching customer, mee te helpen bij de financiering van het eerste bedrijfkapitaal en emotioneel support te leveren. Bedrijven die na het ondernemerschapsprogramma doorgingen moesten zich verder uitstrekken naar nieuwe businesscontacten en hun naambekendheid vergroten door free publicity te realiseren en/of prijzen te winnen. Tevens moesten ze na kennismaking de betreffende partijen aan zich zien te binden door het maken van follow-up afspraken. De student ondernemers die niet in staat bleken om deze stap Richting de markt te maken hebben in de loop der tijd hun bedrijf moeten liquideren. Sommigen zijn gaan werken voor hun eerste klant. De student ondernemers die een duurzaam bedrijf hebben weten op te zetten hebben onder andere geprofiteerd van de goodwill van bedrijven t.o.v. student ondernemers, hebben geen moeite gehad met het stellen van hulpvragen en hebben door de manier waarop ze hun bedrijf in de markt hebben gezet het vertrouwen van klanten en toeleveranciers gewonnen.
De hogeschool heeft in vele gevallen een bemiddelende rol kunnen spelen voor de studenten door ze te introduceren bij stakeholders uit hun eigen netwerk, veelal de gemeente, banken en consultancy bedrijven. Dit heeft een aantal student ondernemers verder geholpen. Ook heeft de hogeschool in diverse gevallen opgetreden als launching customer. In deze gevallen kwam ook de schaduwzijde van deze bemoeienis naar voren, doordat student ondernemers in deze gevallen niet in staat bleken zich verder uit te strekken naar nieuwe klanten omdat ze zich volledig richtten op de operationele zaken. Hiermee werd de keerzijde van het ingebred zijn in een bepaald netwerk benadrukt.

**Thema 3: Het tot stand komen van het sociale netwerk van een bedrijf en de rol van het personeel in dezen**

Uit dit onderzoek kwam naar voren dat personeelsleden van ondernemende bedrijven zonder meer hun sociaal kapitaal inzetten ten faveure van de onderneming. In alle gevallen hadden we te maken met een enthousiaste populatie van jonge mensen (vaak ook hun eerste contact met het bedrijfsleven) die geïnspireerd werden door de ondernemers in kwestie en zich op hun plek voelden in de transparante en veilige omgeving van het bedrijf. Het feit dat er een gezamenlijke verantwoordelijkheid was voor het resultaat en dat het maken van fouten op de koop toe genomen werd, zorgde ervoor dat de werknemers graag in hun netwerk op zoek gingen naar nieuwe werknemers, potentiële klanten of kennis in de vorm van nieuwe ontwikkelingen in de markt. Bij al deze inspanningen werden ook de sociale media, zoals Facebook, Twitter, LinkedIn en Instagram ingezet om deze doelen te behalen. Tijdens het onderzoek rees de vraag of de ondernemers het sociaal kapitaal van hun werknemers wel voldoende op waarde schatten.

**Bijdragen van het onderzoek**

Dit onderzoek heeft bijdragen geleverd aan de literatuur op het gebied van ondernemerschap, sociale netwerken, ondernemerschap educatie en Human Resource management. Ten eerste hebben recente studies aangetoond dat het belangrijk is voor een ondernemer om een sociaal netwerk te ontwikkelen dat bestaat uit familie, vrienden en business relaties. Dit netwerk is voor startende ondernemers van belang bij het ontdekken van kansen in de markt, het toegang krijgen tot investeerders en het verwerven van legitimiteit (Elfring & Hulsing, 2003; Newbert et al., 2013; Rasmussen et al., 2015). Er is echter een tekort aan onderzoeken over de ontwikkeling van netwerken over een langere periode. Dit proefschrift draagt dus bij aan het oplossen van dit tekort en geeft vooral
inzicht in de ontwikkeling van het sociaal netwerk van student ondernemers die nog helemaal moeten beginnen met het ontwikkelen van hun zakelijke netwerk.

Ten tweede draagt dit onderzoek bij aan het inzicht in het vormen van netwerken door het uitvoeren van een uniek experiment op het gebied van de theorie van structural holes (Burt, 1992). Het belang van een sterke motivatie ter overtuiging van een externe partij wordt door dit onderzoek nogmaals benadrukt.

Ten derde draagt dit onderzoek bij aan het vrij nieuwe onderzoeksveld van ondernemerschapsonderwijs met betrekking tot programma’s waarin studenten gestimuleerd worden tot het starten van hun eigen bedrijf (Lee & Jones, 2008; Mwasalwiba, 2010; Moberg, 2014; Lackéus et al., 2015; Rasmussen et al., 2015). Uit dit onderzoek blijkt dat het van groot belang is voor universiteiten en hogescholen om de gevolgen van het stimuleren van het starten van eigen ondernemingen tijdens de studie in ogenschouw te nemen (zie praktische implicaties).

Ten vierde draagt dit onderzoek bij aan de human resource literatuur en de literatuur op het gebied van sociale netwerken en wel vanwege het feit dat de inzet van het sociaal netwerk van werknemers ten behoeve van het bedrijf aan de orde gesteld wordt. In deze studie komt naar voren dat (voormalig) student ondernemers in staat blijken te zijn om een bedrijfsklimaat te scheppen waarbij werknemers ten volle gemotiveerd worden om hun sociaal kapitaal in te zetten ten bate van de onderneming. Ook het gebruik van sociale media ten faveure van de onderneming blijkt het bedrijf in kwestie te helpen bij het bereiken van nieuwe werknemers, klanten en nieuwe inzichten. Er wordt in dit proefschrift ook antwoord gegeven op de vraag van Stuart & Sorensen (2007) naar de samenstelling van het sociale netwerk van een bedrijf als het netwerk van de ondernemer en zijn medewerkers samensmelten. Het blijkt dat de ondernemers niet altijd in staat zijn de waarde van het sociaal kapitaal van hun werknemers voor het bedrijf goed in te schatten.

**Praktische implicaties**

In praktische zin geeft deze dissertatie suggesties richting het ondernemerschapsonderwijs op hogescholen om in het geval van onderwijs waarbij studenten gestimuleerd worden om een eigen bedrijf te starten ook te kijken naar de randvoorwaarden verbonden aan deze stimulans. Daar waar universiteiten en hogescholen al wel een hele infrastructuur hebben opgebouwd om vindingen gebaseerd op patenten te exploiteren middels Technology Transfer Offices en incubators, worden studenten die niet-gepatenteerde vindingen op de markt brengen vaak aan hun lot overgelaten. Dit leidt
in sommige gevallen tot het voortijdig verlaten van de universiteit of hogeschool. Studenten de
mogelijkheid te geven om af te studeren op hun eigen onderneming of om tijdens hun studie maatwerk
aangeboden te krijgen voor bijvoorbeeld het maken van tentamens op ander tijden, zouden stappen in
de goede richting kunnen zijn.

Ook het opbouwen van een sociaal netwerk verdient extra aandacht in het onderwijs op hogescholen en
universiteiten. In dit proefschrift worden een aantal cases behandeld waarbij de opbouw van een sociaal
netwerk een rol speelt. Deze cases kunnen ter illustratie met studenten gedeeld worden en het belang
van een sociaal netwerk in het algemeen en voor ondernemers in het bijzonder onderstrenp.

Conclusie

De aanleiding voor deze dissertatie was de onduidelijkheid over het opbouwen van een sociaal netwerk
door student ondernemers en de factoren die daarbij een rol spelen. Tijdens dit onderzoek zijn diverse
originele datasets opgebouwd waarop conclusies over de ontwikkeling van netwerken zijn gebaseerd.
Door dit onderzoek is het inzicht in hoe student ondernemers hun sociale netwerk opbouwen en welke
rol familie, vrienden en externe relaties hierbij spelen vergroot. In het proefschrift zijn diverse
hypothesen opgenomen die nog nader in de praktijk getoetst kunnen worden en redenen geven voor
vervolgonderzoek. Dit onderzoek heeft eens en te meer duidelijk gemaakt dat ondernemen is ingebed in
een web van sociale relaties en netwerken en dat ondernemers die niet in staat zijn duurzame
contacten aan te gaan met voorheen onbekende zakenrelaties op den duur niet kunnen overleven.

*Terwijl u mij in tranen ziet*
*Zweer ik desnoods 'ik drink niet meer'*
*Maar zonder vrienden kan ik niet*

*(Boudewijn de Groot, 1966)*

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Appendix 1 Questionnaire survey (table 2.2 and 2.3)

dataset 406 students

Q1 till Q101 give answers to these questions on a scale of 1-7

1=totally disagree ... 7=totally agree

Questions about creativity (08, 14, 71, 82), Flexibility (16, 23, 38, 48), Market awareness (7, 36, 64, 68), Endurance (06, 47, 67, 79), Risk taking (01, 39, 60, 75), Self-efficacy (21, 40, 53, 58), Social orientation (13, 30, 49, 62), Need for power (17, 41, 52, 78), Need for autonomy (19, 59, 73, 81) and Need for achievement (03, 37, 51, 56)

01. I am a risk taker

02. I am good at organizing

03. I want to show everybody what I am able of

04. I don’t know what entrepreneurship is about

05. I am able to clearly map out problems

06. People characterize me as very persistent

07. If I owned a firm, I would first sort out how much demand there is for my product/service

08. I come up with original points of view

09. My family and friends stimulate me to be entrepreneurial

10. I monitor the progress of projects

11. I am not planning to start a company in the future

12. When I see something I don’t like. I take measures immediately

13. I talk easily with people I don’t know

14. Others characterize me as creative

15. It is my goal to become an entrepreneur

16. I easily anticipate and adapt to unforeseen events
17. I like to be the boss
18. Entrepreneurship does not with my personal preferences
19. I trust my ability to solve problems
20. I participate in networking opportunities
21. Being an entrepreneur I would control my company
22. I openly question how things can be improved
23. If situations change, I adjust easily
24. I know a lot about entrepreneurship
25. I work in a structured way
26. I can list and weigh advantages and disadvantages well
27. I don’t start new initiatives this year
28. I pay attention to matters beyond my direct task assignment
29. I really want to become an entrepreneur
30. I run into friends in unfamiliar places
31. My family and friends have a negative attitude about entrepreneurship
32. I am able to motivate others
33. I know what is necessary to start a new company
34. I try to meet new people that can help me
35. I put my ideas into action
36. If I owned a firm, I would closely watch the needs of my customers
37. I want to reach goals that are hard to reach.
38. I am able to adapt to any situation
39. I pay attention to matters outside my own environment
40. Entrepreneurship is for me hard to start
41. I can convince others to do what I like
42. I see and realise chances
43. I am interested in a lot of different things
44. If I had the means to start a company, I would do so
45. I get the best out of people
46. My friends and family are enthusiastic about entrepreneurship
47. When I start something I also end it
48. I am a flexible person
49. I am interested in the ideas of other people
50. My family and friends are enthusiastic about entrepreneurship
51. I am ambitious
52. Other people often follow my opinion
53. If I started an enterprise I know where to begin with.
54. My schedules turn out to be realistic
55. I seriously thought about starting a company
56. I want to achieve better results than others
57. I make time to keep in touch with my friends
58. I could easily become an entrepreneur
59. I can cope with everything I have to handle
60. I am willing to take risks
61. Entrepreneurship would give me a lot of satisfaction
62. I get acquainted to people easily
63. I take initiative where others do not
64. If I owned a firm, I would closely watch firms with the same kind of activities
65. I quickly see the broad outlines in a pool of information
66. I am keen on new information
67. I hold on to my initial goals
68. If I owned a firm, I would keep in close touch with potential clients
69. I make high quality analyses
70. Others have a good time when they join me
71. I often have new ideas
72. I have contacts outside my inner circle
73. I know what to do in tough situations
74. I can judge with entrepreneurs are good and which are not.
75. I’m ready to take risks even if it means I can lose a lot
76. I influence people to let them support ideas
77. I take up things that are beyond the definition of my task
78. I am mostly always right
79. I hate unfinished business
80. I am not entrepreneurial
81. If I start with something new, I know I will succeed
82. I have a vivid fantasy
83. A career as an entrepreneur fits me
84. I network actively

Birth year
Gender: 1=male 2=female
Living 1=at parents’ home 2=self-reliant
Gradefe = average grade former education
Famentr = someone of the family is an entrepreneur

Questions about the group process

Credibility
85. I have no problem accepting the suggestions from other team members
93. I trust that the knowledge of other team members about the project is sufficient
90. I do not have much confidence in the expertise of other team members

Coordination
98. Our team works together in a well-coordinated manner
84. In our team there are almost no misunderstandings about what needs to be done
94. Our tasks are accomplished smoothly and efficiently

(Non-hierarchical) participative decision making
99. Strategic decisions are mainly taken by a few team members
91. Strategic decisions are worked out jointly by the entire team
86. Decisions are usually taken by the entire team

Group potency
101. Our team has confidence in the execution of its tasks
88. Our team has the feeling that it can solve any problem
96. No task is too difficult for our team

**Team monitoring**

92. We ensure that all team members continue to work on the project

87. We keep an eye on the progress of each other's contribution to the project

97. We check that everyone in the team fulfils his or her obligations

**Specialization**

95. Each team member has specialized knowledge about a certain aspect of our project

100. Various team members are responsible for expertise in various fields

89. The specialized knowledge of different team members is needed to complete the project
Appendix 2 Questionnaire networking (table 2.4 and 2.4a)

These questions were asked at the end of the venture creation program (20 weeks) and the same list of questions was used during the follow-up interviews of the companies that went on after the program. The interviews were conducted with the start-up team:

01. Which people have helped you during the venture creation program?

02. How often did you meet these people? Frequency contact weekly monthly quarter

03. Who of the members of the start-up team introduced the relationship to the company?

04. In what area does the relationship help? Financial, marketing, general advice, production

05. In which sector is the relationship active?

06. How long does the relationship know the person through whom he / she was introduced?

07. How important is relationship? On a scale of 1-7

08. What is his/her function?

09. In what way is the relationship associated with company? Family, friend, knowledge relationship, business relationship

10. Which of these relationships know each other?

Based on these questions we could calculate average tie strength, network constraint, network size, network density and number of ties. All these data were analysed using the software program UCINET.

During the follow up interviews we also asked which people disappeared from the network list and the reason why the connection was broken. Also the new ties were added.
Appendix 3 Questionnaire business results (table 2.5 and 2.5a)

At the end of the venture creation program we interviewed the teams also about their results. These interviews were repeated during year 1, 2 and 3 for the companies that went on. We based our list on the questionnaire developed by Davidsson and Honig (2003).

01. Does the company still exist?
   01a. If not: What was the reason to cancel the company?
   01b. If yes: Which students still participate within the company?

02. Has the company been registered with the Chamber of Commerce? (only ask if the previous interview shows that this was not the case at the time)
   02a. If not: When will this happen?

03. Has turnover been made within the company in the past six months?
   03a. If not: What was the reason for this?
   03b. If yes: How big was the turnover?

04. How much costs have been incurred?

05. Has income for the entrepreneurs been generated in the first year? If so, how much?

06. Has an external partner invested money in the company? If so, how much?

07. Have you taken out a loan from the bank? If yes, for what amount?

08. Has a business plan for external use been written? (Ask only if the previous interview shows that this was not yet the case)

09. Has a patent for the product been applied for or has a different construction been used to protect the product / service?

10. Has a business space been rented?

11. Which marketing activities have you undertaken over the past six months and how much money have you spent on this?

12. Have you visited network meetings or trade fairs in the past six months? If so, which and what did this yield? Ideas gained, contacts with suppliers, customers recruited

13. What parties have been added to your network in the past period? For this question use the network data from the interview of half a year ago.
14. Describe how you are helped further? For example, introduction producer, supplier, potential customer.
Appendix 4 Venture Creation Program, more detailed information

The venture creation program mentioned in this dissertation is the minor entrepreneurship of the Amsterdam University of Applied Sciences (HvA). This venture creation program started in 2006 and every half year 120-150 students, in the third of fourth year of their bachelor study, from all the faculties of the HvA enter this program. In 2014 we made a documentary about this program and you can find this documentary on youtube to get a good impression of this venture creation program. You can search for “entrepreneurship learning by doing” and find the documentary here: https://youtu.be/7tGeR3FogOc

About 40-50 businesses of on average 3 students are started each half year. During the 20-week venture creation program the bachelor students start searching for a concept they could develop and bring to the market (Opportunity Recognition). The first four weeks are spent on market research and building a team that has the right qualities to do the job. After that the start-up team, made up of one to four students, registers with the Chamber of Commerce in the Netherlands and works on developing the product or service they have chosen (Resource Mobilization). Every team has a dedicated coach that meets the team on a weekly basis to talk about the developments. After they developed their concept/product they start selling it and work on their marketing and publicity (Gaining Legitimacy, building status). During the program, workshops are given to the students in which they can develop entrepreneurial skills like sales, marketing and networking. Also classes about legal aspects, financing and human resources are part of the program.

After 20 weeks the students are assessed on their progress and are rewarded (or not) with 30 ECTS for their bachelor study of applied sciences. The pictures on the next pages show some facts of 10 years minor program (2016) and show the customer journey of the students (learning by doing).

Scan QR code if you want to watch the documentary.
A study of the development of social networks of student entrepreneurs over time during and after a venture creation program

Martinus Johannes Haring (1959) did his PhD at the faculty of Economics and Business Administration at the VU University Amsterdam. Martin holds an MSc degree in Business studies from the University of Amsterdam. He has worked at the Amsterdam University of Applied Sciences since 2001. and specialized in entrepreneurship education. In 2006 he was one of the founders of the minor entrepreneurship of the Amsterdam University of Applied Sciences and in recent years he has assisted hundreds of students in starting their own business. Martin’s motto is: “Lobi da basi” (Typhoon, 2014)

With a little help from my friends

The ability to extend personal relationships by bridging new networks is a crucial entrepreneurial skill. Based upon this statement, the research problem of this dissertation is defined as: How do student entrepreneurs develop their network over time in favour of the new ventures they create and how do they motivate their employees to use their social capital in favour of the company they work in?

To answer these questions, several companies started by students of the Amsterdam University of Applied Sciences during the minor entrepreneurship were followed from 2009 till 2017. During this period of time many interviews were conducted, business competitions visited, opening parties of new offices attended, business fairs visited and other milestones were celebrated.

Based on these data and impressions, three articles were written in which conclusions were drawn about the way student entrepreneurs build and use their social network in favour of their company. In this dissertation you can read the outcomes and perhaps use them in practice.

Have fun!

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