ABSTRACT

This study provides an investigation of the effect of human and social capital on advancement and self-efficacy of entrepreneurs through venture emergence. It contributes to entrepreneurship research by covering all phases of the dynamic process and establishing novel outcome measures. Data was collected from 714 entrepreneurs in a random sample of 10,000 Danes and multiple regressions used to test 4 propositions. Human and social capital are generally found to positively effect self-efficacy and advancement of entrepreneurs, although professional network influence is insignificant and education only partly significant. The results should assist in increasing our understanding of venture emergence and help identify efficient policies and measures to lower entrepreneurial exit rates.

INTRODUCTION

Using data collected from randomly selected respondents, this study provides an investigation, based on entrepreneur network theory, of the effect of human and social capital on venture emergence and perceived entrepreneurial self-efficacy.

Many studies in the field of entrepreneurship, borrowing from sociology and economics, have investigated the effects of human and social capital on entrepreneurial performance, such as growth in sales, employees or profit (1997; Lee, Lee et al. 2001; Westhead, Wright et al. 2001; Baum and Locke 2004). Some of this line of research has been criticized for the performance measures used (Robinson 1999; Witt 2004) and recommendations made for increased integration of outcome and process oriented research (Hoang and Antoncic 2003). Furthermore, limited attention has been paid to interaction effects between social and human capital (Coleman 1988; Davidsson and Honig 2003).

Hoang and Antoncic (2003) call for increased integration between process and outcome oriented research by exploring how concepts from one research stream can usefully extend theoretical models in the other. They argue that outcome oriented research can become richer when combined with theoretical insights arising from research on network dynamics. With a dynamic longitudinal research design that covers the whole entrepreneurial process scholars can stop asking whether questions and start asking when and how questions. Furthermore, by using a longitudinal design it is possible to limit the “success” bias, where potential entrepreneurs that abandon their intentions will often be excluded from research.

Sociologists have for many years investigated the interaction between human capital and social capital (Bourdieu 1986; Coleman 1988), while most entrepreneur scholars have been focused on the separate
effects of human and social capital on performance. However, the interacting mechanisms between human and social capital have largely been ignored in entrepreneurship research and have only recently caught the attention of a limited number of entrepreneurship scholars (Davidsson and Honig 2003).

Gartner (1985) describes the process of new venture creation in a framework of four perspectives. The perspectives include the characteristics of the individuals, the process, the environment and the organization. The individual perspective covers background of entrepreneurs, such as age and entrepreneurial parents, human capital such as education and experience, and personality or psychological characteristics, such as need for achievement and risk taking propensity. The social capital is important in the first steps of the process perspective as it includes location of business opportunity and accumulation of resources. This study will be limited to the individual perspective based on human capital and the first steps of the process perspective based on social capital.

This study is based on entrepreneur network theory (reviews: O'Donnell, Gilmore et al. 2001; Hoang and Antoncic 2003) at the cross-roads of entrepreneurship theory and social network theory. Much of the research done in entrepreneur network theory has focused on the outcome of the venture emerging process (reviews: Chakravarthy 1986; Murphy, Trailer et al. 1996). This study focuses on ego-networks (Greve and Salaff 2003) and human capital of entrepreneurs in three phases of the venture emergence as defined by the Global Entrepreneurship survey (GEM) and the effects on entrepreneurial advancement and self-efficacy. Furthermore, it focuses on how the interaction effects of human and social capital (Mosey and Wright 2007) influence the process.

In this study previous entrepreneurship research is expanded, by viewing venture emergence as a dynamic process, which is captured using a longitudinal design and a random sample of entrepreneurs operating in all phases of the process. The article uses an advancement measure as integration between process and survival and utilizes solid measures of human and social capital to investigate their effects on entrepreneurial outcomes. After the introduction, we review previous literature in order to develop our hypotheses. The literature review is followed by a methodology section before the empirical results are presented. The article ends with an interpretation and a conclusion including practical implications and implication for future research.

**HUMAN CAPITAL, SOCIAL CAPITAL AND ENTREPRENEURIAL OUTCOME**

**Human capital**

Human capital refers to an investment through which individuals expect economic returns (Becker 1993). Previous research offers various human capital factors such as education level, management, industry, entrepreneurial or start-up experience (Dyke, Fisher et al. 1992), personality traits and creativity (Ardichvili, Cardozo et al. 2003). Some researchers distinguish between "specific" and "general" human capital (Becker 1993). Specific human capital refers to skills or knowledge that is useful only to a single venture or industry, whereas general human capital is useful for most applications. Finally, it is possible to distinguish between human capital factors that can be measured objectively, such as education level, and human capital factors being more subjectively measured, such as personal traits (Chandler and Hanks 1994; Gatewood, Shaver et al. 1995). Subjective human capital factors often involve individuals’ own perception of their human capital.

In this study, we focus on three human capital factors: education level, start-up experience and start-up skills. Together they cover a broad range of human capital factors. Education represents the “general” dimension of human capital. Start-up experience covers the “specific” dimension and perceived start-up skills represent the “subjective” dimension of human capital. These three factors cover different dimensions of the concept of human capital.

**Education**

Education level is a common way of measuring human capital (Coleman 1988; Becker 1993). For instance, Boxman (1991) concludes based on his findings that education is the major indicator of human capital. Previous research evidently reveals that individuals’ education level influences individuals’ performance. A range of entrepreneurship studies have confirmed a similar relationship between education and performance (Robinson and Sexton 1994; Gimeno, Folta et al. 1997; Arenius and De Clercq 2005).


Start-up experience

Start-up experience is also a common way of measuring human capital (Bruderl, Preisendorfer et al. 1992; Becker 1993; Cooper, Gimenogascon et al. 1994). In entrepreneurship studies, experience is more often operationalized by distinguishing between individuals with previous start-up experience and individuals without start-up experience. Normally, entrepreneurs without previously start-up experience are termed novice entrepreneurs, whereas entrepreneurs with previous experience are termed habitual entrepreneurs (Alsos and Kolvereid 1998). Previous research clearly reveals that start-up experience has strong influence on entrepreneurs’ performance (Dyke, Fisher et al. 1992; Mosey and Wright 2007).

Start-up skills:

Perceived start-up skills here represent the “subjective” dimension of human capital. A few studies have investigated the perceived start-up skills and found positive influence with performance. Arenius and De Clerc (2005) and Arenius and Minniti (2005) find that confidence in one’s own skills to start a business is the single most important factor related to individuals’ decision to start a business. Koellinger et al. (2007) came up with similar results analyzing data from 18 countries. Chandler and Jansen (1992) found a positive relationship between the self-perceived competence of entrepreneurs and their performance, their conclusion was that their ventures enjoyed a higher level of growth and earnings.

Social capital

Scholars have generally found social capital to consist of elements such as trust, joined values or norms and social resources gained within a social structure. Nahapiet and Ghoshal (1998), inspired by Bourdieu (1986) and Burt (1992), present a more narrow definition of social capital: “The sum of the actual and potential resources embedded within, available through, and derived from the network of relationship possessed by an individual or a social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network” (Nahapiet and Ghoshal 1998, p. 243). The idea of social capital has been imported to entrepreneurship theory through the literature on entrepreneurial networks. Here it is argued that entrepreneurs obtain resources from their social networks that help them perform. Various structural network compositions have been argued to influence entrepreneurship - e.g. closeness, density, diversity, range, size, reachability, and structural holes – although many of them covariate.

Here, we focus on two network structure characteristics: network size and ratio of professional network, representative of social capital.

Network size

In this article network size will be defined as the number of direct links between the entrepreneur (ego) and his/her contacts. A general proposition is that the number of contacts has an positive impact on resource flows and hence on entrepreneur outcome (Hoang and Antoncic 2003).

Network size is among the most investigated structural network variables. It is argued that network size increases entrepreneurs’ performance. A larger network is more likely to provide entrepreneurs with more information and also more non-redundant information than a smaller network. This proposition that network size increases entrepreneurs’ performance has received empirical support (Greve 1995; Hansen 1995; Greve and Salaft 2003), although a few studies came short of a positive relation (Aldrich and Reese 1993). While it is accepted that network size increases entrepreneurial performance, it is also acknowledged that the relationship is not linear (Watson 2007). If the network becomes too large, the amount of time spent on maintaining the network exceeds the value of belonging to the network. Thus, too large network could prove counter-productive (Watson 2007).

Professional network

People are differently related to each other and the type of relation influences the kind and value of information individuals can access from their network. Granovetter (1973) was among the first to discuss how different types of relations provide different value for people. He distinguishes between strong and weak ties and discusses how people access different information from strong and weak ties. His concept of strong and weak ties has since inspired many other ways of operationalizing types of contact. Ostgaard and Birley (1996) define personal ties as relations with family, friends and acquaintances which the entrepreneur relates to primarily on a social level, and professional ties as primarily concerned with business, such as professional consultants. Along the same lines, Evald,
Klyver et al. (2006) identify four different continuums all closely related to the concept of strong and weak ties that have been used in entrepreneurship literature: family-stranger, social sphere-business sphere, long lasting relationship-one shot exchange and frequent interaction-low interaction.

Although acknowledging that different types of relations are preferable at different stages of the entrepreneurial process, it can be argued that a high proportion of professional ties are productive for the entrepreneurial process across all stages. Thus, a high proportion of professional ties increase entrepreneurs’ performance.

**Entrepreneurial outcome**

Entrepreneurial performance has been measured in various ways. Some considerations include what measure suits the different phases of the venture emerging process and whether to use real or a subjective measures (Cooper 1993). Furthermore, when including all phases of venture emergence it becomes difficult to choose indicators in the same survey that are suitable for all phases.

In a review covering the years 1987-1993, Murphy, Trailer and Hill (1996) identified 51 articles based on the outcome measures used. They discovered that growth (23), efficiency (13), sales (13) and profit (11) were very common measures, but failure (4) and subjective assessment (4) were barely used. Growth and efficiency have been and still are common outcome measures but process oriented measures (Davidsson and Honig 2003; Elfring and Hulsink 2003), and perception measures (Erikson 2002; Paige and Littrell 2002) have become more common in recent years.

In our own review of outcome measures covering the years 1994-2006 and limited to five major entrepreneurship journals we discover that the use of process oriented measures has become the second most used measure after growth and the use of subjective and survival measured has increased from earlier reviews. This development takes a step toward meeting the demands for more process oriented research and subjective measures. Here we focus on entrepreneur advancement and entrepreneur self-efficacy, to try to cover different dimensions of outcome measures that might be suitable for all phases of venture emergence.

**Entrepreneur advancement**

In this study we are interested in advancement of the entrepreneur through venture emergence. The entrepreneur can exit from the process, remain in same phase or advance to another phase in the process. It is accepted that not all transitions are completely comparable between phases. The concept of advancement encompasses previously used measures such as survival or rather non-survival to indicate exit, start-up activities to indicate the start-up phase and actual self-employment to indicate young business venture phase.

Survival can be seen as see as a minimum criterion of success (Bruderl and Preisendorfer 1998). The criterion for survival is usually defined as staying in business for the first few years of operation and sometimes stands alone as an outcome measure (Littunen 2000). More often it is accompanied by other outcome measures, such as growth (Cooper, Gimenogascon et al. 1994) and then non-survival represents the lowest level of performance.

Before the venture has been founded the most commonly defined outcome indicator is start-up activity. Carter, Gartner et al (1996) have identified certain start-up activities as representative of a successful start-up and suggest that those activities can be viewed as milestones towards founding a venture. The frequency and pace by which these activities are completed will make it possible to move the nascent entrepreneur process forward toward founding the venture and thus moving into self-employment (Davidsson and Honig 2003).

Many studies have used reported self-employment as a major indicator for entrepreneurial behaviour (Bates 1995; Reynolds 1997; Henley 2007). Founding the venture and entering self-employment must be the goal of most entrepreneurs, just as stopping the process can not be the goal of many.

It thus seems logical that the goal of the entrepreneur is to advance through the venture emerging process and because of that can be used to measure the entrepreneur outcome. The two following hypotheses posit a positive relationship between the independent variables and entrepreneur advancement:
**Hypothesis 1**: There is a positive relation between social capital measured as: a) network size, b) professional network proportion and entrepreneur advancement

**Hypothesis 2**: There is a positive relation between human capital measured as: a) education, b) start-up experience, c) start-up skills and entrepreneur advancement

**Entrepreneur self-efficacy**

Cognitive explanations of entrepreneurs’ behaviour and performance have increasingly become accepted (Forbes 1999; Erikson 2002; Baum and Locke 2004). It has been found that individuals’ perceptual values - including variables such as alertness, autonomy, self-efficacy and confidence – are important in explaining entrepreneurship (Krueger, Reilly et al. 2000; Arenius and De Clercq 2005).

Self-efficacy has been defined as the self perceived competence of an individual to perform tasks or to reach goals. Competence is related to self-efficacy which has been suggested to have a positive affect on the entrepreneur process (Ardichvili, Cardozo et al. 2003). Krueger has researched self-efficacy in connection with entrepreneurship (Krueger Jr and Brazeal 1994; Krueger, Reilly et al. 2000) and suggests that it is positively related to many performance measurements. The two following hypotheses assume a positive relationship between the independent variables and entrepreneur self-efficacy:

**Hypothesis 3**: There is a positive relationship between social capital measured as: a) network size, b) professional network proportion and entrepreneur self-efficacy

**Hypothesis 4**: There is a positive relationship between human capital measured as: a) education, b) start-up experience, c) start-up skills and entrepreneur self-efficacy

**METHODS**

**Data**

The original data for this study was collected in 2006 in connection with the Danish participation in the international research project Global Entrepreneurship Monitor (GEM). Randomly, 10,000 adults (between 18 and 64 years old) were contacted and telephone interviewed about their entrepreneurial activities. From this screening, 714 were chosen to participate as entrepreneurs in a follow-up survey. Respondents were indentified as potential entrepreneur, who intent to start a business within the next three years (395), nascent entrepreneurs, who are active in the process of starting a business (101) and young owner- managers, who are running a newly established business younger than 42 months (218). This definition of entrepreneurs is based on well-tested GEM survey methodology (Reynolds, Bosma et al. 2005).

In a follow-up survey, respondents were asked questions about their general human capital (level of higher education), specific human capital (start-up experience) and perceptual human capital (start-up skills). These questions were used to construct the human capital independent variables.

The position-generator (Lin 2001) was used to capture the respondents’ activated social networks. Respondents were specifically asked whether they had received advice regarding the start-up from individuals presented as a distinctive list of roles. The roles ranged from family members to various kinds of business relations. The following question was used to construct the social capital independent variable: “Have you asked others for advice on starting? Have you asked for advice from … (repeat for every option) your family, friends, a bank advisor, a lawyer, an accountant, another kind of advisor in the private sector, a public sector advisor at your local business support office, another kind of advisor in the public sector, a person with much business experience, a person who is currently starting a business, a researcher or an inventor, an expert in your field, your current supervisor, a former supervisor, current colleagues, former colleagues, a possible investor, an international contact.” The respondents could answer each option with a yes or no.

**Dependent variables**

**Advancement**

The advance of the respondents through venture emergence is measured on a three point scale, which is treated as numerical. Entrepreneurs at any phase who report to have exited the process are coded 0. Entrepreneurs at any phase, who report to remain in the same phase between years, are coded 1, and
entrepreneurs at any phase, who report a transition between phases, are coded 2. Transition between phases is measured when a potential entrepreneur becomes nascent or an owner-manager. Furthermore, a code of 2 is applied for a nascent entrepreneur who becomes an owner-manager.

**Self-efficacy**
Respondents’ self-efficacy is measure by the following question: "Compared to other entrepreneurs, do you think that you are equally effective, more effective, or less effective?" Here respondents can choose one of these options or a do not know. Respondents who report to be less effective are coded 1, while respondents who report to be equally effective are coded 2 and respondents who report to me more effective are coded 3. The scale is treated as numerical.

**Independent variables**

- **Network size**
The number of direct ties between the respondent (ego) and his/her contacts constructs the network size variable. The size is measured on a numerical scale and can vary from 0-18 based on the number of direct ties.

- **Professional network**
The frequency of professional ties in the network is used to calculate the proportion of the professional network. The professional ties are 7 out of the 18 total, and each respondent's professional ties are divided by his/her network size to construct the proportion of the professional network. Former research (Aldrich, Rosen et al. 1987; Ostgaard and Birley 1996; Bruderl and Preisendorfer 1998; Lechner, Dowling et al. 2006) is used as guidance in selecting which roles are categorized as professional ties. The professional ties are the following: bank contacts, lawyers, accountants, private sector advisors, local official sector advisors, other official sector advisors, researchers. The professional network is measured on a numerical scale and has a value between 0-1, based on the proportion of the professional ties in the network.

- **Education**
A dichotomous scale is used to measure the respondents’ higher education: less than 3 years of higher education is coded as 1, and 3 years or more higher education is coded as 2.

- **Start-up experience**
The respondents are given two options regarding their start-up experience, with the following question: “Have you ever been involved in starting up a business before?” Start-up experience is coded 1, while lack of start-up experience is coded 0.

- **Start-up skills**
Respondents’ start-up skills are measured with the following question: “Do you have the knowledge or skills needed to start a new venture?” Perceived start-up skills are coded 1 and lack of start-up skills receives coding 0.

**Statistical techniques**
Descriptive statistics are used together with multiple linear regressions. Control variables include respondent’s exact age, gender and one of three venture stages; gestation, emerging and newly established. The age of the respondent is coded accordingly, the gender is coded 1 for men and 2 for women, and the stages are coded 1 for gestation, 2 for emerging and 3 for newly established.

**RESULTS**
Table 1 shows the mean, frequency and percentages of each variable. The respondents have a mean network size of 4.9 ties, while the mean ratio of professional ties among the entrepreneurs is approximately 0.25.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Network size – mean</td>
<td>4.9</td>
</tr>
<tr>
<td>Professional network proportion - mean</td>
<td>0.246</td>
</tr>
</tbody>
</table>

AGSE 2009

1242
Education:
- Low: 378 (54%)
- High: 329 (46%)

Start-up skills:
- Yes: 537 (78%)
- No: 150 (22%)

Start-up experience:
- Yes: 251 (35%)
- No: 457 (65%)

Advancement:
- Transition: 103 (19%)
- Status quo: 293 (54%)
- Exit: 144 (27%)

Self-efficacy:
- High: 189 (28%)
- Medium: 285 (43%)
- Low: 195 (29%)

Age – mean: 39 years

Gender:
- Women: 275 (38%)
- Men: 439 (62%)

Stage:
- Gestation: 395 (55%)
- Emergence: 101 (14%)
- Newly established: 218 (31%)

Little over half of the respondents have less than 3 years of higher education and the remaining 46% have 3 years or more of higher education. Knowledge or skills to start a venture is reported by 78% of the respondents and 35% report to have founded a venture before. In the period between the two surveys, 19% of the respondents have transitioned between phases, 43% are in the same phase, while 27% have exited the process. When asked how effective they feel compared to other entrepreneurs, 43% claim they feel equally effective, while 29% feel less effective and 28% more effective. The mean age is approximately 39 years and men account for 62% of the respondents and women 38%. A majority of the respondents find themselves in the gestation phase (55%), while 14% and 31% respectively find themselves in the emergence phase and the newly established phase.

Correlations between variables are presented in Table 2. No variables have correlation higher than 0.7, which indicates that there is no problem of multicollinearity. All the significant correlations between the independent and the dependent variables are positive. The dependent variable entrepreneur advancement has a significant correlation with the independent social capital variable network size and all independent human capital variables. The dependent variables self-efficacy has a significant correlation with both the independent social capital measures and the independent human skills variables start-up skills and start-up experience, while the remaining correlations are insignificant.
Table 2: Means and correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network size</td>
<td>4.9</td>
<td>1</td>
<td>0.18**</td>
<td>0.07</td>
<td>0.03</td>
<td>0.03</td>
<td>0.09*</td>
<td>0.13**</td>
<td>-0.19**</td>
<td>0.04</td>
<td>-0.08*</td>
</tr>
<tr>
<td>Professional network</td>
<td>24.6</td>
<td>1</td>
<td>0.03</td>
<td>0.05</td>
<td>0.08</td>
<td>0.05</td>
<td>0.12**</td>
<td>0.09*</td>
<td>0.01</td>
<td>0.34**</td>
<td></td>
</tr>
<tr>
<td>Higher education</td>
<td>1.47</td>
<td>1</td>
<td>0.02</td>
<td>0.04</td>
<td>0.10*</td>
<td>-0.04</td>
<td>0.18**</td>
<td>0.08*</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start-up skills</td>
<td>0.78</td>
<td>1</td>
<td>0.15**</td>
<td>0.14**</td>
<td>0.16**</td>
<td>0.18**</td>
<td>-0.11**</td>
<td>0.10**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start-up experience</td>
<td>0.35</td>
<td>1</td>
<td>0.13**</td>
<td>0.12**</td>
<td>-0.22**</td>
<td>-0.02</td>
<td>-0.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advancement</td>
<td>1.99</td>
<td>1</td>
<td>0.21**</td>
<td>0.05</td>
<td>-0.12**</td>
<td>0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.92</td>
<td>1</td>
<td>0.02</td>
<td>-0.08*</td>
<td>0.14**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>39</td>
<td>1</td>
<td>0.07</td>
<td>0.16**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1.39</td>
<td>1</td>
<td>-0.08*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>1.75</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05
** p < 0.01
A multiple linear regression analysis was completed in order to test the hypotheses. Table 3 shows linear regressions with standardized coefficients, between the dependent and independent variables controlling for age, gender and phase.

Network size has a significant positive influence on entrepreneurial advancement (p<0.05), while the network professional proportion is insignificant. We found that all the human capital variables: education (p<0.01), start-up skills (p<0.05) and start-up experience (p<0.05) have a significant positive influence on entrepreneur advancement. Therefore, hypothesis 1a is supported, whereas hypothesis 1b is not. Hypothesis 2 is fully supported.

Table 3: Linear regression: social and human capital effects on entrepreneur advancement and self-efficacy, controlled for age, gender and phase

<table>
<thead>
<tr>
<th>Variables</th>
<th>Advancement</th>
<th>Self-efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network size</td>
<td>0.11*</td>
<td>0.13**</td>
</tr>
<tr>
<td>Network professional proportion</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>Education</td>
<td>0.12**</td>
<td>-0.06</td>
</tr>
<tr>
<td>Start-up skills</td>
<td>0.10*</td>
<td>0.12**</td>
</tr>
<tr>
<td>Start-up experience</td>
<td>0.11*</td>
<td>0.09*</td>
</tr>
<tr>
<td>Age</td>
<td>-0.01</td>
<td>-0.03</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.14**</td>
<td>-0.04</td>
</tr>
<tr>
<td>Phase</td>
<td>0.02</td>
<td>0.13**</td>
</tr>
<tr>
<td>Constant</td>
<td>3.25**</td>
<td>9.01**</td>
</tr>
<tr>
<td>N respondents</td>
<td>477</td>
<td>598</td>
</tr>
<tr>
<td>Adjusted R square</td>
<td>0.059**</td>
<td>0.058**</td>
</tr>
</tbody>
</table>

* p < 0.05
** p < 0.01

Network size (p<0.01) has a significant positive influence on self-efficacy, while professional network ratio is insignificant. Hypothesis 3a is therefore supported, while hypothesis 3b is not.

Start-up skills (p<0.01) and start-up experience (p<0.05) also have a significant positive influence on self-efficacy, while the influences from education is insignificant. Thus, hypotheses 4b and 4c are supported, while hypothesis 4a is not.

DISCUSSION

The positive influence of the human capital variables on entrepreneur progress does not come as a surprise and supports former research. The negative association of education (although not significant) with self-efficacy, was not expected. This suggests that start-up experience and perceived skills make people feel more effective than higher education. This calls for attention since education has the strongest correlation of the human capital variables with the entrepreneurial advancement.

Most previous research shows a positive influence between the size of social networks and entrepreneurial outcome measures (Greve 1995; Hansen 1995; Greve and Salaff 2003), although some findings are indecisive (Aldrich and Reese 1993). This study supports those findings although the correlation is not very strong.

The association between human and social capital variables and entrepreneur outcome variables may be effected by different factors. Factors that might explain the difference in these finding and previous research include the methodology used and possible interaction effects between human and social capital.

The potential entrepreneurs, who represent a large proportion of the total sample, might make the finding here different from previous research. Actually, although it is outside the realm of this study, the association between social capital and outcome is weakest among the potential entrepreneurs. This
might also help explain the weak association of the ratio of the professional network with the outcome measures.

The outcome measure advancement has not been used much in previous research. This might cause the difference here because for simplicity sake it assumes that every type of advancement in the process is comparable, although clearly it is not.

Another methodological factor that might effect the findings, also this should also effect previous finding is the assumption of a linear association the network has with entrepreneurial outcomes. It has been suggested that this might not be the case (Watson 2007). If the network becomes too large, the amount of time spent on maintaining the network exceeds the value of belonging to the network. Thus, a too large network might influence the outcome measures in a negative way (Watson 2007).

The interaction effects between human and social capital might influence their association with the outcome measure. Human capital and social capital might be co-productive and complement each other while individuals are getting an education. They increase their human capital through increase in knowledge and skills and at the same time they might create a long lasting social network that generates social capital (Fedderke, De Kadt et al. 1999). Furthermore, individuals likely form social networks as they gain start-up experience. Greve et al. (2006) argue that human capital supports and strengthens social capital as people with high human capital more easily utilize their social capital.

Piazza (2002) suggests that there may be a significant substitution effect between some forms of human and social capital. Since creating and maintaining social capital is a time intensive task, entrepreneurs might rather decide to invest time in human capital skills or in entrepreneurial skills. Others suggest that human and social capital might even be counterproductive. Boxman, Degraaf et al. (1991) argue that return on human capital decreases when economic actors have access to a large volume of social capital. They found that return of human capital is highest when managers are practically without social resources. Others have argued that investments in human capital and entrepreneurial skills might substitute investments in social capital (Honig 1998; Piazza-Georgi 2002). Human capital and social capital are then perceived as different means to the same goal.

CONCLUSION

In this study we investigated the effect of human and social on perceived self-efficacy and entrepreneur advancement through venture emergence. The empirical investigation was based on a survey of 714 randomly selected entrepreneurs originally done in 2006 and a follow-up survey in 2007. In general, human capital and social capital were found to positively influence the advancement and self-efficacy of entrepreneurs. It was for instance found that there is an association between higher education, start-up experience and perceived start-up skills and advancement through venture emergence. Entrepreneurs with higher human capital also tend to perceive themselves more efficient, although a positive relationship between higher education and self-efficacy was not reported. Furthermore, it was found that entrepreneur size of networks is positively associated with the advancement and self-efficacy of entrepreneurs, but an association neither exists between network professional proportion and entrepreneur advancement nor self-efficacy.

Limitations of the study are mostly associated with the operationalization of social capital, the concept of advancement and causality.

Firstly, due to the position-generator approach, the network size variable might be imprecise since each respondent was offered a predetermined selection of contacts to choose from. This list is of course not exhaustive and some entrepreneurs might have more contacts within one single position. However, this study actually deals with more positions than most previous research using the position-generator approach (Watson 2007). The approach is at risk of mixing and exchanging what the respondents perceive as personal and professional ties. (Aldrich, Rosen et al. 1987).

Secondly, the advancement concept allows for three different types of advances. The entrepreneur can exit from the process, remain in same phase or transit to the next phase in the process. It is accepted that the concept of advancement might be more complex than presented in this study. Although not taken into account here exit, status quo or transit from one of the phases might not be the same as
from another, although they are all treated the same here. Also, it is accepted that not all exits can be explained by failure. More sophisticated statistical methods might assist in decreasing this limitation.

Thirdly, it is accepted that causality might be a problem, especially with the dependent self-efficacy variables. To improve causality it might have been better to measure self-efficacy in the following year, but that would have introduces an even larger problem of success bias, since that data is only available for the respondents that were still defined as entrepreneurs in the second year.

This study is different from most others through its focus on all the venture emergence process and the use of outcome indicators. This might prove fruitful in theory building as well as practice in that it might increase our theoretical understanding of venture emergence and help us identify efficient policies and measures to lower exit rates of entrepreneurs. A longitudinal research design is promising to capture the dynamic influence of social and human capital an interaction effects between the two.

These results have essential implications for entrepreneurs intending to found a new venture. They should pay attention to the importance of the human capital and social capital and seek situations and try to act in ways where the benefits can be maximized. Although social capital does not seem to be as strong an influence as human capital, entrepreneurs should pay especial attention to it, as it might prove very important for them in order to utilize their possessed human capital (Coleman 1988; Greve, Benassi et al. 2006).

There is a universal acceptance of the importance of entrepreneurship for the economy, but high exit rates of entrepreneurs are costly. This study underlines the importance of higher education, entrepreneurial experience and a large social network.
REFERENCES


