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Empirical Analysis on Factors Behind Successful Entrepreneurs

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Abstract

This research analyzes how human capital and social capital may impact business start-up activities by dividing the business start-up process into three stages and two periods. It shows that the kind of social capital involved in setting up a company differs from that required for the entrepreneur to make a profit. It also shows that successful entrepreneurs and those who are not exhibit different trends in their selection of persons with whom they consult regarding business operations and the contents of the consultations.

Keywords: Nascent entrepreneur, Start-ups, Social capital, Knowledge diffusion
JEL classification: L26, L14, D83, M13

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1. Introduction

Entrepreneurship is an essential factor from both microeconomic and macroeconomic perspectives. From a microeconomic viewpoint, start-ups benefit society by introducing technological innovation. For instance, research data from the United States indicate that only 1–2% of all technological discoveries make their way into actual products and generate economic profit (Braunerhjelm, Acs, Audretsch, and Carlsson, 2010). From a macroeconomic viewpoint, start-ups improve the unemployment rate and sustain economic growth. There are two ways in which entrepreneurs improve the unemployment rate. One way is by becoming self-employed, as an alternative to finding an employer (Fonseca, Lopez-Garcia, and Pissarides, 2001), and the other more efficacious way is by creating new jobs through the foundation of a new growing venture, which was mentioned in U.S. President Barrack Obama's State of the Union Address (Obama 2012). By realizing a new combination of financial capital and labour, start-ups can improve productivity and sustain economic growth even as endowments remain constant (Braunerhjelm et al., 2010).

In Japan, the ratio of entrepreneurs to the total working population, as measured in the 2011 Total Entrepreneurial Activity[1] indicator by the Global Entrepreneurship Monitor,[2] is very low, ranking 51st among the 55 countries surveyed. In addition, relatively few business ventures grow to a large size. For example, the Bloomberg Businessweek website reports that the total value of initial public offerings in the United States, whose gross domestic product is three times that of Japan's, was 52.4 billion U.S. dollars in 2011, while that for Japan totaled only 12.9 billion U.S. dollars, half of it attributable to the relisting of Japan Airlines Co. shares.

Under such circumstances, for the sake of the Japanese economy, there is an urgent need to help individual entrepreneurs succeed, to boost not only their overall number, but also the number of those who become stars. The goal of this research is to contribute to this issue by examining the human capital and social capital of entrepreneurs.

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1 GEM: Global Entrepreneurship Monitor

This questionnaire survey is initiated in 1999 as a partnership between the London Business School in the United Kingdom and Babson College in the United States. The 2011 project compiled data from 55 comparable countries on the impact that entrepreneurial activity brings to the national economy.

2 TEA: Total Entrepreneurial Activity

This is an index of a nation's entrepreneurial activity based on the answers to interview-questionnaire surveys. The questions include, "Are you planning to start a new business, including self-employment, sale of goods, provision of services, etc., by yourself or with someone else?" and "Are you self-employed, the owner of a company engaged in the sale of goods, provision of services, etc., or involved in the management of such a company?" The calculated ratio of respondents answering "yes" to these questions is 8% on average for all advanced nations, while it is 5.2% for Japan.

Previous research has shown that both human capital and social capital play an important role in entrepreneurship. However, there are several phases in starting a company: finding an entrepreneurial opportunity, executing the launch, and making the first profit. Through these processes, are the same types of both capital always needed? We believe that shedding light on this question will help entrepreneurs find a way to navigate each phase successfully.

In addition, social capital is something that entrepreneurs themselves can build at will. Selected research has shown that most types of both capitals do not come by chance. They result from entrepreneurs building up to meet their needs. If so, is there a difference between the ways in which successful entrepreneurs and unsuccessful ones build their respective social capital? Identifying this difference also should help them succeed continuously.

This study first divides entrepreneurial activity into three phases and two periods, and examines the possible influence that human capital and social capital have on the activity. Then it looks at the entrepreneurs' selection of who they consult and the content of the consultation, and examines the tendencies exhibited by successful entrepreneurs in such behavior.

2. Theory and research survey

2-1. Entrepreneurial Process

Entrepreneurship is defined as discovering potential goods and services (opportunities) and then exploiting the process of evaluation and development (Shane and Venkataraman, 2000; Venkataraman, 1997). This can occur as often in intra-firm projects or inter-firm ventures (Eckhardt and Shane, 2011) as it does in setting up new firms, however, this study focuses on the latter.

Entrepreneurship means going through various phases. Bhave (1994) interviewed entrepreneurs and proposed three phases: finding a business opportunity (Opportunity Stage), setting up an organization (Technology Setup & Organization Creation Stage), and bringing the product onto the market (Exchange Stage). Shane and Venkataraman (2000) suggested two phases, namely, finding an opportunity to start a company (Discovery) and developing customers and raising funds (Exploitation), and defined the completion of both phases as a business start-up. Other studies subdivide the start-up process into phases such as first sales, first profit, first corporate tax payment, etc., calling it the "gestation" process (Davidsson and Honig, 2003; Jianwen and Welsch, 2008). As Fig.1 shows, this research perceives the process as three phases, adding a phase of earning the first profit to the two phases defined by Shane and Venkataraman (2000), plus two periods—the first one from the discovery of an opportunity to the execution of a start-up (exploitation process), and the

second one from the execution to earning of the first profit.

2-2. Human capital and social capital that have an impact on entrepreneurship

Regarding the requisite human capital and social capital to entrepreneurs, the influence of the former on the execution is a classic area of interest. As Davidsson and Gordon (2011) pointed out, the common perspective is that human capital brings a positive impact (Bosma, Praag, Thurik, and Wit, 2004; Shane, 2000; Ucbasaran, Westhead, and Wright, 2007). It is defined that the capacity, educational background, and past vocational experience of the entrepreneur are never varied by either time or occasion. An entrepreneur with an advanced level of education or ample experience is more likely to discover an entrepreneurial chance (Shane and Venkataraman, 2000). Even after starting a business, the entrepreneur can learn additional skills through managing his/her firm and thereby increasing the likelihood of success (Brush, Manolova, and Edelman, 2008).

In recent years, the influence of social capital on an entrepreneur's success has been attracting researchers' attention (Baron and Markman, 2003; Davidsson and Honig, 2003; Honig, 1998; Hsu, 2007; Ostgaard and Birley, 1996). Ostgaard and Birley (1996) showed that it can positively impact sales, profit, and employment after the start-up, while Honig (1998) showed the effect on the entrepreneur's income. Furthermore, Davidsson and Honig (2003) showed that social capital, particularly participation in business networks such as a chamber of commerce, has a significant influence on the decision to start a business and on its success afterwards (measured in terms of sales and profit within the first 18 months).

According to Adler and Kwon (2009) and Nahapiet and Ghoshal (1998), social capital as a resource is separate from the personal characteristics of the entrepreneur, and is obtained through social relationships between the entrepreneur and his/her friends and acquaintances. Accordingly, the friends and acquaintances of Entrepreneur A comprise an egocentric network centered on Entrepreneur A (Scott, 2000) and convey the information and implicit/explicit knowledge of entrepreneurship to Entrepreneur A. As Adler and Kwon (2009) points out, "Social capital can enable access to a broader range of information, raise the quality and reliability of the information and shorten the time to obtain it."

We also may need to consider that Baron and Markman (2003) and Ozgen and Baron (2007) showed that social capital can influence the success of a start-up because information obtained from acquaintances sharpens the entrepreneur's perception. In their research, the two types of capital for entrepreneurs are not independent of each other. The theory that social capital influences cognition,

which is a type of human capital, gets some support from research on entrepreneurship. Another study suggests that "people who have excellent human capital tend to spend more time obtaining social capital" (Bosma et al., 2004; Glaeser, Laibson, and Sacerdote, 2002). However, this study assumes that both types of capital are independent and do not influence each other, just as assumed by Davidsson and Honig (2003).

2-3. Differences in types of capital required in start-up phases

We have seen that both types of capital can influence the success of their entrepreneurial activities. The next question is whether the same types of capital are needed throughout the start-up phases, or are they different?

Cooper, Folta and Woo (1995) and Greve and Salaff (2003) showed that entrepreneurs need different information and information sources depending on which phase of the business start-up process they are in. Discovery of start-up opportunities depends significantly on the character of the entrepreneur and the information on hand (Shane, 2000; Venkataraman, 1997). On the contrary, it is just as important to obtain information from others before the execution of the start-up (Aldrich and Martinez, 2001; Aldrich and Zimmer, 1986; Newbert and Tornikoski, 2007). In other words, researchers suggest that the business start-up process cannot be executed with only the capabilities and information required to discover start-up opportunities.

For the phase in which the new firm turns profitable, researchers focus on business plans and suggest that the capacity to make plans before starting the business is not related to the profits earned afterward (Lange, Mollov, Pearlmutter, Singh, and Bygrave, 2007). In addition, Honig and Karlsson (2004) showed that encouragement from friends and family members and support from organizations assisting start-ups are useful for preparing the business plans, but does not contribute to the continuation of the business or its profitability. Thus, previous research suggests that a start-up may not be profitable with only the capacity and information required before the foundation.

Previous research typically looked at only one phase of the business start-up process at a group of phases in combination, however this thesis overviews the success factors of entrepreneurs in each of the three phases and the two periods of the start-up process.

3. Research method

3-1. Data

This thesis utilizes the "Internet Survey on Entrepreneurship at Start-ups" jointly conducted in

September 2012 by the Research Institute of Economy, Trade and Industry (RIETI) and Kazuyuki Motohashi, professor in the Faculty of Engineering, University of Tokyo. The survey questionnaire was sent to 135,059 individuals, out of whom a total of 85,007 people aged 22 to 60 and who are graduates from 14 universities[1] were selected for statistical analysis. A total of 7,023 valid responses were obtained, including 1,501 respondents with experience in starting a business and 5,522 without such experience. The 14 universities are the alma maters from each of which more than 10 out of 1,432 Japanese entrepreneurs graduated[2].

The 1,501 entrepreneurs among the 7,023 valid responses is an excessively high ratio compared to the average ratio of entrepreneurs in Japan. This is because Transcosmos Inc., which was commissioned to conduct the survey, allowed less time for respondents with no entrepreneurial experience compared to those with experience, since the focus of the survey was to compare characteristics between the former and the latter.

3-2. "Entrepreneur" as referred to in this study

The average age of the respondents is 44.5, the median is 45.0, and the standard deviation is 9.0. As Fig. 2 shows, their ages range from 22 to 60, and are concentrated between 35 and 55, while there are a few below age 35.

The 1,501 respondents with entrepreneurial experience, as Fig. 3 shows, have an average age of 46.2 years, the median is 47.0, and the standard deviation is 8.8; there are fewer respondents aged below 35 compared to the entire sample, and more aged 45 or older.

Among the 7,023 who gave valid responses, 5,694 have a bachelor's degree, while 1,329 have either a graduate or doctorate degree. All of them are from the 14 universities. The survey subjects had a higher academic background compared to the average entrepreneur in Japan.

For serial entrepreneurs who had started multiple businesses, the age at which the first business was started was considered to be the age at which they started their business. As Fig. 4 shows, the average age is 34.8, while the median is 34, and the standard deviation is 8.6. The oldest age is 60, while the lowest is 13.

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1) The University of Tokyo, Keio University, Waseda University, Kyoto University, Osaka University, Hitotsubashi University, Tokyo Institute of Technology, Doshisha University, Sophia University, Chuo University, Aoyama Gakuin University, Tohoku University, Meiji University and Tokyo University of Science.

2) Japan Venture Research Co. , the biggest entrepreneurial data base company in Japan, compiled data of domestic entrepreneurs, totalized 1432. It sorted entrepreneurs by alma maters and selected 14 universities as above, from which more than 10 entrepreneurs graduated.

Figure 5 shows the distribution of the timing at which the respondents started a business. The earliest is 1972, while the latest is 2012. The number of instances increased around the year of 2000.

The distribution of the industry sectors for their first start-up is shown in Fig. 6. There are more start-ups in the service and IT industries compared to other industries.

Out of the sample of 7,023 respondents, 4,822 neither discovered an opportunity to start a business nor ever contemplated it. Among the other 2,201 respondents, 1,501 actually founded a business, while 700 found an opportunity but failed to launch. Of the 1,501 who started a business, 962 made a profit.

3-3. Regression Analysis

Models 1, 3 and 5 use logistic regression analyses.

Model 1 divides the sample into the 4,822 respondents who had no experience in starting a business and the 2,201 respondents who tried to start one, regardless of whether or not it materialized, or, in other words, those who discovered an opportunity to start one. The dependent variable is 1 for the discovery of a start-up opportunity.

Model 3 excludes the respondents who had no interest in starting a business, leaving the 700 who discovered a start-up opportunity but never realized it and the 1,501 who actually executed it. The dependent variable is 1 for the execution of a start-up.

Model 5 is designed to examine if the business was successful after it took off, using an indicator of profitability. In order to prevent our study from failing to capture business with future potentiality only because a profit had not yet been procured (Davidsson and Gordon, 2011), respondents who launched two or more businesses were given the dependent variable of 1 if they made a profit in their first company and excluded 95 respondents who started their first business in 2011 or later.

Models 2 and 4 use regression analysis on the length of the period.

Model 2 examined the influence of human and social capital on the length of the period between the planning stage and the actual foundation. The period till the start of the company was given a categorical dependent variable of 1 for less than a year, 2 for one to three years, and 3 for over three years, and we conducted ordered logistic regression analysis.

Model 4 examined the period up to when the first profit was yielded, using ordinary least squares regression analysis. In this regression, too, first start-ups created in 2011 and later were excluded. The periods are in increments of one year, and within the range between zero to 15 years, averaging 1.75 years. The lengths of the periods are in line with the data for Swedish entrepreneurs conveyed

by Davidsson and Honig (2003).

In this study, an achievement of each of the three phases is called a “success.” It might seem that the shorter the two periods are, the more successful is the business, but there is no observed correlation between the length of the period till the start of the business and the profit it makes later. Thus, we do not discuss the success and the length of the periods.

3-4. Independent variables

For the configuration of the independent variables, we used Davidsson and Honig (2003), Hsu (2007) and Ostgaard and Birley (1996) in Table 1. All of these studies used questionnaire survey results, but they adopted different independent variables, especially those related to social capital.

Regarding independent variables related to human capital, we used the square of the years employed (1. yrs exp^2), years in managerial positions during the years employed (2. yrs manager), whether the respondent had an MBA (3. mba), experience in joining a new business team at the employer (4. start-upteam), experience in investing venture capital funds (5. investorexp), whether the respondent had a bachelor’s degree (=0) or master’s or doctorate degree (=1) (6. baormore). Except for the number of years in Variables 1 and 2, all are binary variables (0/1). We also added parameters asking whether the respondent had started a business in the same industry he/she was in during the employed period (=1) (7. pre-exp), or in the same industry in which his/her parent was employed or had started a business (=1) (8. parentsheritage).

In this study, we assume a sequence in which entrepreneurs first acquired human capital and then succeeded with their entrepreneurial activity. Respondents who were employed for the first time after they found firms are not few, 116 among the 1,501. This means that when these respondents started their firms, they had not experienced being employed or working in managerial positions, and also did not have investment experience or the experience of being employed in the same industry. Therefore, we reset the independent variable to zero for these respondents. Similarly, we reset the variables for respondents who launched at an early age such as 13 or 16, because they did not have a bachelor’s degree or higher, including an MBA, at the moment.

As for social capital, we used binary independent variables of “consulted/sought” (=1) and “had not consulted/sought” (=0) for the responses to the questions asking whether they had: “consulted colleagues or bosses at my former employer” (9. pre-excoll), “consulted persons who have entrepreneurial experience” (10. pre-exp), “consulted friends (11. pre-friends), “sought cofounders” (12. pre-cof) and “sought talented employees/staff” (13. pre-staff). In Model 3, we adopted binary

variables, that asked respondents who had not completed the exploitation process whether they had consulted or sought the above five options during the process. In Model 1, unlike the above, we did not use Variables 9–13 since we considered the respondents as having "made efforts to start a business in the past" by the fact that they had approached these social capital agents. Based on the structure of the questionnaire, those efforts are already counted as the trial which is referred to as "1" in independent variable in Model 1.

Regarding post-foundation, for stabilization or expansion of the business, we set the variables of "consulted/sought" (=1) and "had not consulted/sought" (=0) for the responses to the questions asking whether they had consulted/sought: "colleagues/bosses at my former employer" (14. post-excoll), "someone who had started a business" (15. post-exp), "friends" (16. post-friends), and "cofounder, director or talented employees in the company" (17. post-cofstaff).

In addition to such direct consultees on starting a business, we set variables for the answers "yes" (=1) and "no" (=0) to questions asking whether the respondents had acquaintances (18. friendsentre) or family members including parents and siblings (19. familyentre) who are founders/CEOs, as independent variables common to both the periods before and after their start.

Control variables are the age at which the respondent had started (20. startage) and the gender (21. gender).The assigned dummy variables are for every 10 years in order to control longitudinal changes in the number of business foundations. We adopted the squared term of the length of employment in years because of its nonlinearity(1. yrsexp^2) (Hair, Black, Babin and Anderson, 2010).

As much as human capital and social capital, financial capital is also an important factor in entrepreneurship (Cooper, Gimeno-Gascon, and Woo, 1994). While Davidsson and Honig (2003) and Ostgaard and Birley (1996) did not use variables related to financial capital, Hsu (2007) set two binomial control variables on whether the respondent 1) received funds from "angel" investors and 2) received written offers for funds in the past. In our study, it is also possible that the influence of human capital and social capital in each of the phases may differ depending on the existence of financial capital in the beginning. The survey does not reveal if the respondents had financial capital, but it asked whether they had "made a request to raise funds" (=1). We assigned it as a proxy of the availability of financial capital and used it as a control variable (22. finance). In order to control the degree of motivation and preparation before starting the business, we adopted "prepared business plans" (=1) as a control variable (23. Plan) as an indicator of how prepared the respondent was at the point of start. These two control variables are from questions in the exploitation period, however, we

assumed that the effects of the request and plans would continue thereafter. Thus, we applied these control variables in Models 2, 3, 4 and 5.

Some of the correlations of explanatory variables in Tables 2 are worth considering. Because respondents consulted the same person before and after their start, we did not apply variable pairs such as Variables 9 and 14, 10 and 15, 11 and 16, and 12 and 17 in the same estimation model. On the other hand, there were no high correlation coefficients between human capital and social capital (combinations between Variables 1–8 and 9–19), as discussed in section 2-2, and those statistics led us to treat them as independent of each other.

3-5. Test

In this section, we discuss two additional series of tests conducted on entrepreneurs' acquisition of their social capital.

Test 1 examined if there is any correlation between the abundance of personal relationships of the consultees, which indicates the quality of information provided by the consultees, and the success to entrepreneurs. For targeted respondents who cited "colleagues and bosses at my former employer," "persons who have experience in starting a business," and "friends" as their consultees after their start, the survey asked whether their "consultees have a wide range of personal relationships inside/outside/inside & outside the start-up business sector" (=1) or "consultees do not have a wide range of personal relationships/not sure" (=0). We formed 3×2 response matrix and conducted a two-sample test of proportion to compare the ratio of answering "1," in order to see if there were difference between profitable entrepreneurs and those who are not.

Test 2 looked into with whom the entrepreneur consulted and on what topic, by examining whether the selection of topics according to the consultees may have some bearing on the entrepreneur's success. We selected respondents who cited "colleagues and bosses at my former employer," "people with experience in starting a company," and "friends" as their consultees and examined whether they "consulted" (=1) or "did not consult" (=0) each of them about "important business decisions (except for investments and loans)," "trivial matters related to day-to-day business operations (except for investments and loans)," "investments and loans," "philosophy for company executives," "acquiring cofounders, talented employees, business partners, customers or service providers (such as attorneys and accountants)," "personal worries." In order to see if there were different trends between profitable entrepreneurs and those who are not, we again conducted two-sample test of proportion tests.

4. Analysis results

4-1. Comprehensive examination of the models

As Table 3 shows, a chi-squared test and Hosmer–Lemeshow test (Hair et al., 2010; Hosmer and Lemeshow, 2000) confirmed that there was no problem in the fitness of Models 1, 3 and 5.

Models 3 and 5 are consistent with Davidsson and Honig (2003), suggesting that the probability of people starting a business is influenced by both human capital and social capital, just as in Sweden. Their research suggests that participation in the chamber of commerce has some bearing on starting a business and making a profit, but this research applied different classification of social capital and showed that colleagues and bosses at their former employer, as well as family members and acquaintances who are founders/CEOs, also play an important role.

In addition, as Table 4 shows, a chi-squared test on Model 2 and an F-test on Model 4 confirmed that there was no problem in the fitness of the two models.

4-2. Test on independent variables in the models

As for human capital, length of employment in years (Variable 1) and more than master degree (Variable 6) had a negative impact on the success of the start-up efforts and extended the period till the launch and before the first profit in Models 2 and 4. By contrast, the length of experience as a manager in years (Variable 2) had a positive impact on the success of each phase. The impact of having an MBA (Variable 3) and that of investor experience (Variable 5) differed between phases. Having an MBA contributed to discovering entrepreneurial opportunities but had no impact on actual foundation or profit. Meanwhile experience as an investor had a positive impact on the former stage, but a negative impact on the latter, and extended the period between the start-up and the profit. Having experience in joining a start-up team (Variable 4) can be useful in discovering opportunities, but it has no bearing on the launch or on profit. The vocational experience in the same industry sector (Variable 7) was slightly positive on a profit, while having parents in the same industry sector (Variable 8) shortened the exploitation period.

Regarding social capital, we found that consulting with colleagues or bosses at a former employer (Variables 9 and 14) had a positive impact on foundation, but had no bearing on profit. Also, it extended the period from the start to earning a profit. Consulting individuals who had entrepreneurial experience (Variables 10 and 15) did not influence the success of the start-up, but tended to extend the period till the exploitation process in Model 2. Consulting friends (Variable 11)

had a negative impact on the execution. As for partners (Variables 12 and 17) and staff (Variables 13 and 17), respondents who sought cofounders or staff had a higher probability of foundation. The exploitation period tended to be longer for entrepreneurs who sought such people, and so was the period till the first profit.

Notable variables are whether the respondent's acquaintances included individuals who are founders/CEOs (Variable 18) and whether the respondent's family members included individuals who had the same experiences as above (Variable 19). This regression analysis result suggests that the types of social capital which affect entrepreneurs are different depending on the phase of the start-up process. Having both of those contacts had a positive impact on the discovery of opportunities to start. On the foundation stage, only family members were found to have been useful, on the other hand, however, family members had no impact on the profit stage, and only having such acquaintances had a positive impact on profitability. Also, the period till earning a profit tended to be shortened as the latter contacts. They were extracted through multiple-answer questions, "which of the following describes your acquaintances, such as entrepreneurs, CEOs, company executives, or investors" and they are separated from the "friends" who were consulted by entrepreneurs (Variables 11 and 16).

As for the control variables, the probability of being profitable turned lower when the age at which the respondent started a company becomes higher (Variable 20). Gender (Variable 21) indicated that males were more likely to discover opportunities and actual launch, but that gender had no effect on profit. A request to raise funds (Variable 22) or prepare business plans (Variable 23) had a significantly positive impact on a launch, but neither on growth in later phases nor on the length of period till earning a profit. The dummy variables during the phase in which the start-up process is exploited indicated that entrepreneurs who started a business during the 1990s especially were likely to realize profitability.

In this analysis, we assured the causal effects of consultation and the effect of it by careful capture of the timing of the two events. In details, as shown in Appendix 1, we eliminated the possibility that the respondents consulted their acquaintances after starting the company or making a profit, by questioning whom to consult with twice before and after the launch. However, still, the sequential relationship between the timing of consulting and the one at which the entrepreneur formed an expectation for his/her success is not clear. This means that the entrepreneur was able to found the firm due to having consulted with colleagues or bosses at his/her former employer in principle, but we also need to consider the possibility that the entrepreneur felt first that he/she could

realize a start-up and then consulted his/her ex-colleagues or bosses.

4-3. Examination of the tests

Three series of test were conducted in Test 1, as shown in Table 5. There was a significant difference in two series of the tests between respondents whose start-up made a profit and those which did not. Precisely, the former and the latter, although both of them had consulted someone with entrepreneurial experience, were significantly different in the proportion of respondents who answered that they "had lots of acquaintances inside/outside/inside & outside the start-up sector." It was also the same with the colleagues and bosses at their former employers "had lots of acquaintances inside/outside/inside & outside the start-up business sector." On the other hand, at another test, whether entrepreneurs' friends "had lots of acquaintances inside/outside/inside & outside the start-up sector" was unrelated to profitability of a firm. Friends are social capital that entrepreneurs develop independently from the goal of their business. In that sense, whether or not the friends have many acquaintances does not have a significant influence even if entrepreneurs consult them about their business. By contrast, entrepreneurs consult people with start-up experience or colleagues and bosses at former employers because they can, for example, refer potential cofounders, talented staff, business partners, and consultants or service providers and thus fit the entrepreneurs' needs. It is a rational decision for entrepreneurs to consult the two first kinds of the contacts out of the three above, if the purpose is to obtain information.

The consultation timing is limited to "when contemplating further expansion/stabilization of the business after it was launched," as shown in Appendix 1. This test only examined whether there is a difference between successful entrepreneurs and those who are not. But it is unlikely that a founder has time to think about "further expansion/stabilization" after making his/her first profit. Therefore, this difference was not the result of profitability.

15 tests are conducted in Test 2, as shown in Table 6. There was a significant difference in three of the tests between profitable respondents and another. For example, a significant difference was found in their responses to questions asking whether they had consulted their colleagues or bosses at their former employers "about trivial matters related to daily operation of the business (excluding requests for investments or loans)," and people with start-up experience "about philosophy for company executives" and "about acquiring cofounders, talented employees, business partners, consultants and service providers." On the other hand, there were respondents who sought a role model in colleagues and bosses at their former employers, who did not necessarily have start-up

experience, by consulting “about philosophy required for company executives” and those who answered that they had consulted people with start-up experience, who were not necessarily close friends, “about personal worries.” These do not seem to be likely choices that exemplify strategic use of social capital, and were found to have no relationship between the consulting options and the success. This result from Test 2 indicates that entrepreneurs’ use of social capital in a rational manner vis-à-vis their goals may have an impact on the success of their start-up activities.

Conclusion and further research

5-1. Human capital and social capital required by entrepreneurs

This study found that the types of human capital required for the success of entrepreneurs are not always the same during the period between the time when a start-up opportunity is found and the time when the start-up begins making a profit and that even if the person has the aptitude for entrepreneurship, it may not lead to future success.

Having an MBA and experience working as an investor have the effect of enhancing the opportunity-finding ability to extract useful information for start-up activities from information generally available, helping to discover opportunities (Shane, 2000). However, this opportunity-finding capacity did not contribute to profit. In addition, investor experience had a positive impact on discovery and its execution, but had a negative effect on making a profit. This indicates how the skills and knowledge required by entrepreneurs can differ before and after the foundation.

We also found from the tests in section 4-2 that different types of social capital are required by entrepreneurs depending on the phases: discovery, foundation and the first profit. In section 4-3, successful entrepreneurs showed a tendency to select consultees and the content of consulting in a more rational manner respective to their purposes as entrepreneurs, compared to those who are unsuccessful. Past research points out that entrepreneurs can choose to build (“bridging”) or strengthen (“bonding”) their relationships (Adler and Kwon, 2009). It is also suggested that entrepreneurs are aware of who can be the necessary information source in choosing the persons with whom they establish a relationship (Greene and Brown, 1997), and that entrepreneurs’ action (“strategic legitimacy”), more than the given human capital or the nature of the business (“conforming legitimacy”), has a larger impact on the execution of a business (Newbert and Tornikoski, 2007).

What can be concluded from this study is that entrepreneurs can improve their chances of success

by building the necessary social capital that corresponds to each of the phases. In other words, if the entrepreneur grew up in a family with other founders or CEOs, the person is likely to actually found a business, but he/she can also improve the potentiality by becoming acquainted with other founders or CEOs.

5-2. Research themes for the future

As we mentioned above, different types of social capital are required for entrepreneurs before and after the foundation, but as for the reasons why it happens, there are still many issues to be investigated. To be specific, the mechanism of an entrepreneurs' success is brought by the social capital including family members or acquaintances who are founders/CEOs. Ucbasaran, Westhead, and Wright (2009) proposed an indicator called "information search intensity" (Greene and Brown 1997) that measures information in terms of its utility and diversity for the recipient, and showed that the more information-providing contacts, such as employees, suppliers, customers, friends and family members, that the entrepreneur has and the more "non-redundant" the information provided by these contacts, the greater the advantage for the entrepreneur in finding opportunities to start and execute the succeeding process. This suggests that in the realm of social capital, having more people to provide a diversity of information is essential to entrepreneurs. On the other hand, Peterman and Kennedy (2003) suggest that a role model for an entrepreneur is necessary in both finding an opportunity and exploiting it. Such role models can enhance entrepreneurs' expectations and motivation and dissipate anxiety, helping to lower the psychological hurdles associated with being an entrepreneur. It is possible to take the explanatory variables; family members or acquaintances of founders/CEOs in this research as such role models.

In order to shed more light on how such social capital may work, it is also necessary to analyze the details of the information the entrepreneur received in specific entrepreneurial phases. Analysis should be carries out to clarify what kinds of information entrepreneurs obtained during the business expansion/ stabilization phase which our study covered, as well as during the opportunity-discovering phase and the execution phase, so that differences in requisite social capital between these phases can be verified.

There is another issue regarding when do entrepreneurs build their relationships with acquaintances of founders/CEOs, or with cofounders and the staff. For instance, this thesis found that having those kinds of acquaintances has a positive impact on a profit. Although the research differentiated them from the entrepreneur's classmates in a university, it failed to reveal whether the

entrepreneur met them before or after being an entrepreneur. If they are acquainted while contemplating the entrepreneurial idea after graduation, it can be seen that the relationship is brought by a "peer effect" (Nanda and Sorensen 2010), while if they met after the start, the entrepreneur may be considered to be receiving more business-specific information from someone in the same industry. Entrepreneurs who looked for a cofounder or staff had a higher probability of execution of start-ups than those who did not. Those who made a profit were found to have spent a large amount of time consulting them about firm management. It is also worth to investigate the reason why these entrepreneurs strengthen the relationships with cofounders and staff before earning a profit?

Further research on the structuring process of social capital will enable construction of a recommendation system of specific social capital to entrepreneurs in the future.

5-3. Discussion on policy perspective

The importance of building social capital for entrepreneurs is already widely acknowledged and private/public incubators receiving governmental support and venture capital funds provide opportunities for entrepreneurs to meet other entrepreneurs and referral services. This study has shown that entrepreneurs need different types of social capital before and after the foundation. In order to take advantage of this finding in government policies, such social events and referral services should be tailored to each of the phases in the entrepreneurial process. This study also suggests that policy goals and the programs should be separated, in relation to an increase of amount of entrepreneurs on the national or country level and the success of each entrepreneur. It is beyond the scope of this study to determine which of the two policies is more important, however, Yasuda (2010), using a survey on entrepreneurs, showed that individual attributes that make it easy (or difficult) for prospective entrepreneurs to start a business have a negative (or positive) impact on the performance later on, and pointed out that more start-up support after foundation may be needed currently in Japan.

Also, Takahashi et al. (2013) indicates that, compared to other countries, Japan has a significantly large number of people who are not interested in or do not have the capacity to start a company, or who think there is little possibility of being a founder ("people indifferent to entrepreneurship"[3]), and go on to suggest that this is one of the reasons why the ratio of entrepreneurs in the total

3 Takahashi et al. (2013) coined the term "people indifferent to entrepreneurship" for survey respondents who answered "no" to both of two questions, asking if they "were personally acquainted with a person who had started a new business in the past two years" and "had the knowledge, ability and experience required to start a new business."

population is relatively low in Japan. His view suggests that for people potentially starting a business in Japan, there is a shortage of human capital and social capital in the phases of discovering opportunities or execution of the start-up process. If this problem lasts a long time, a useful measure to improve the low ratio of entrepreneurs may be a precollege-level program suggested by Takahashi's research, which creates opportunities for students to see founders who can transfer implicit and explicit entrepreneurial knowledge and information.

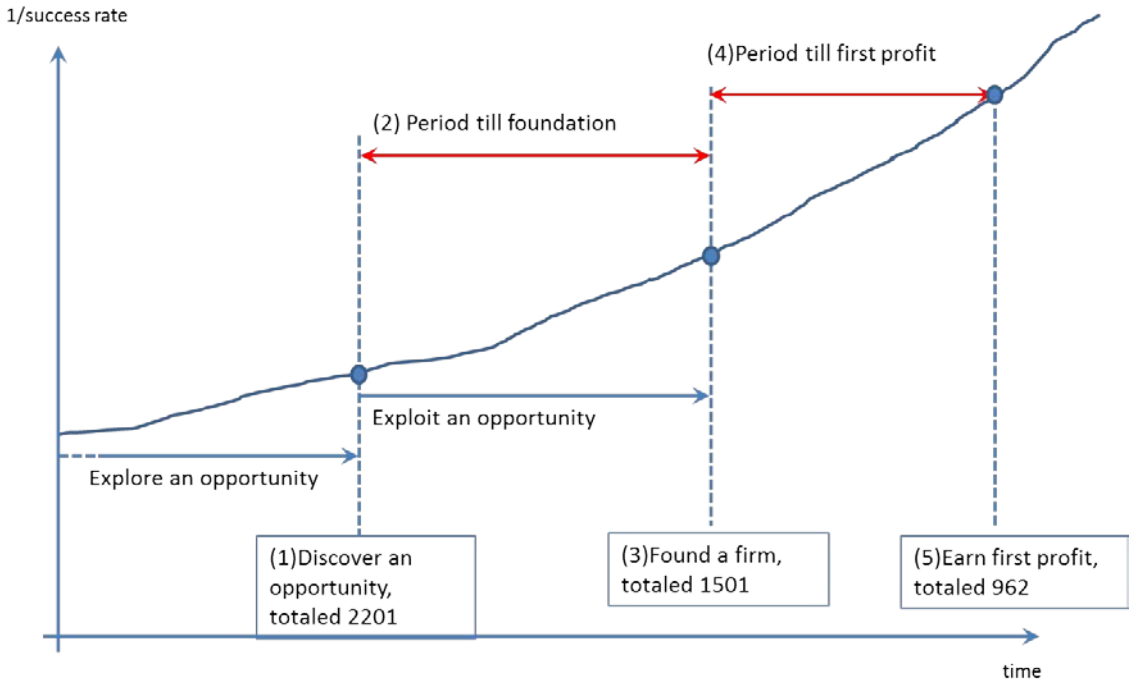

Fig1：Process of entrepreneurship of this research

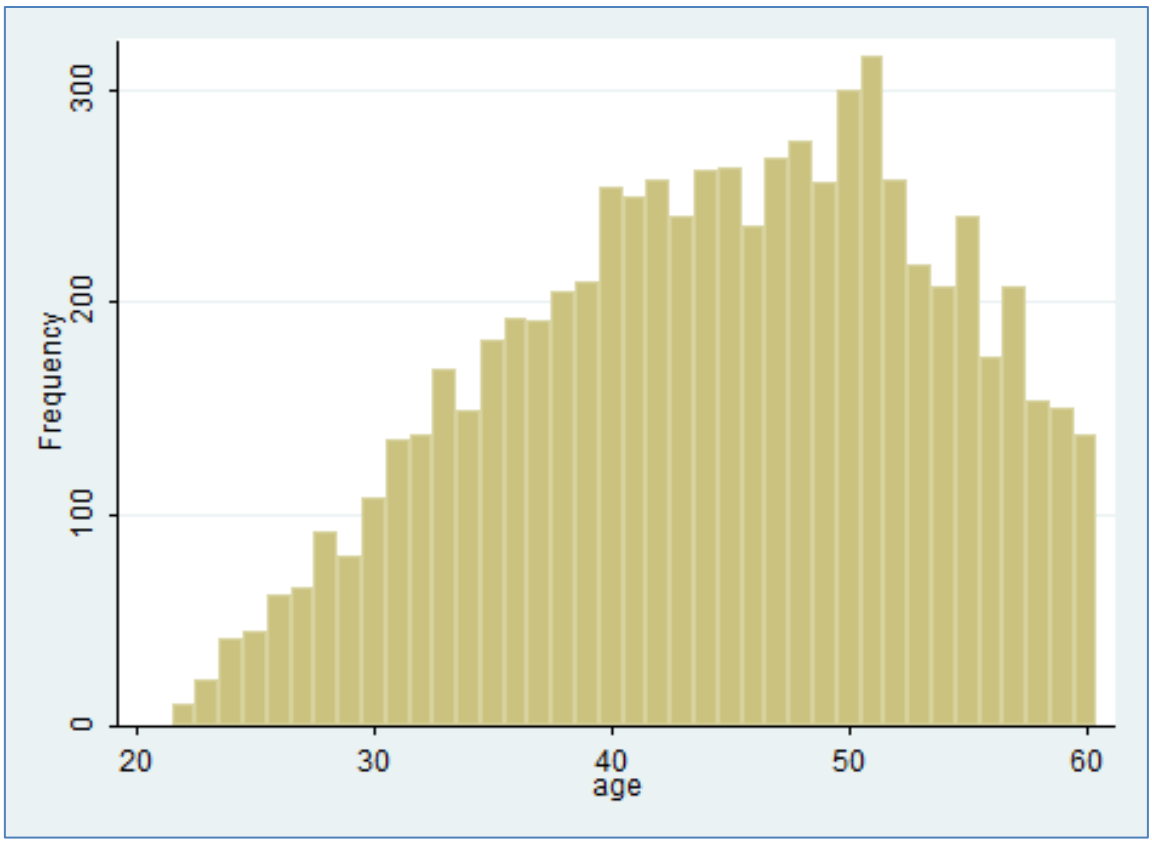

Fig2: Age distribution of respondents

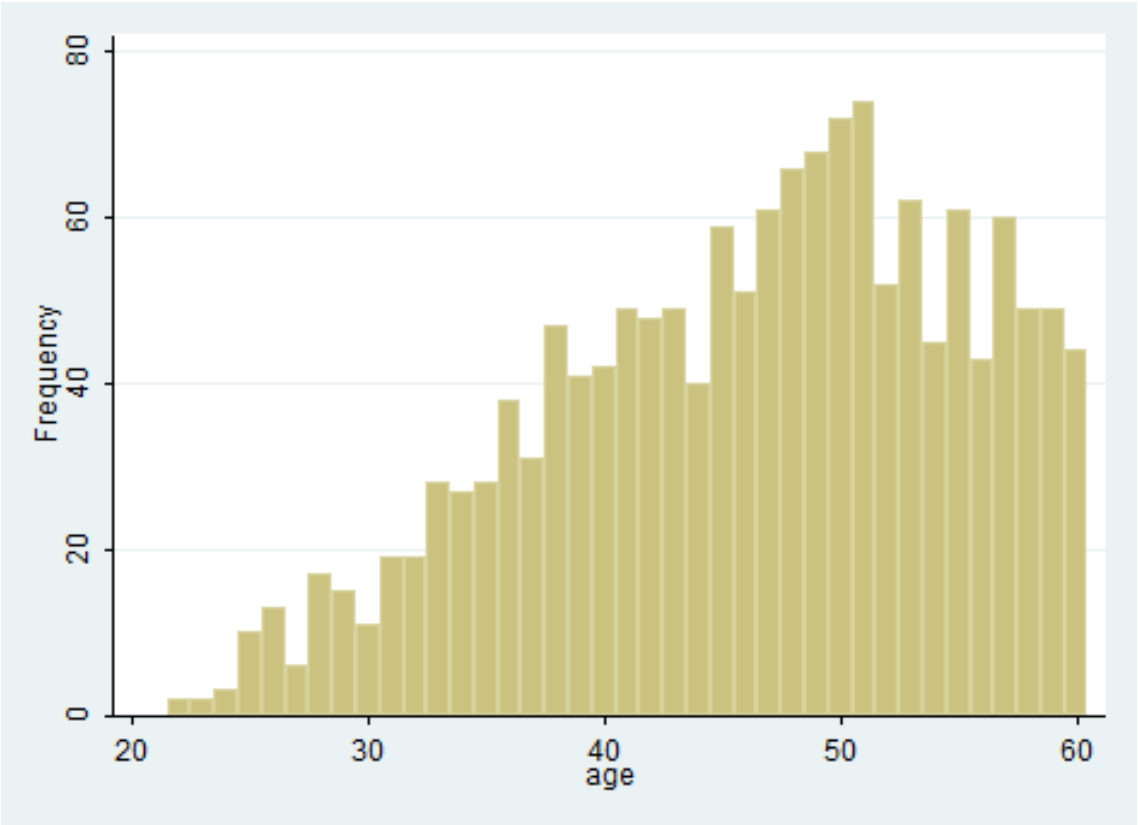

Fig3: Age distribution of entrepreneurs

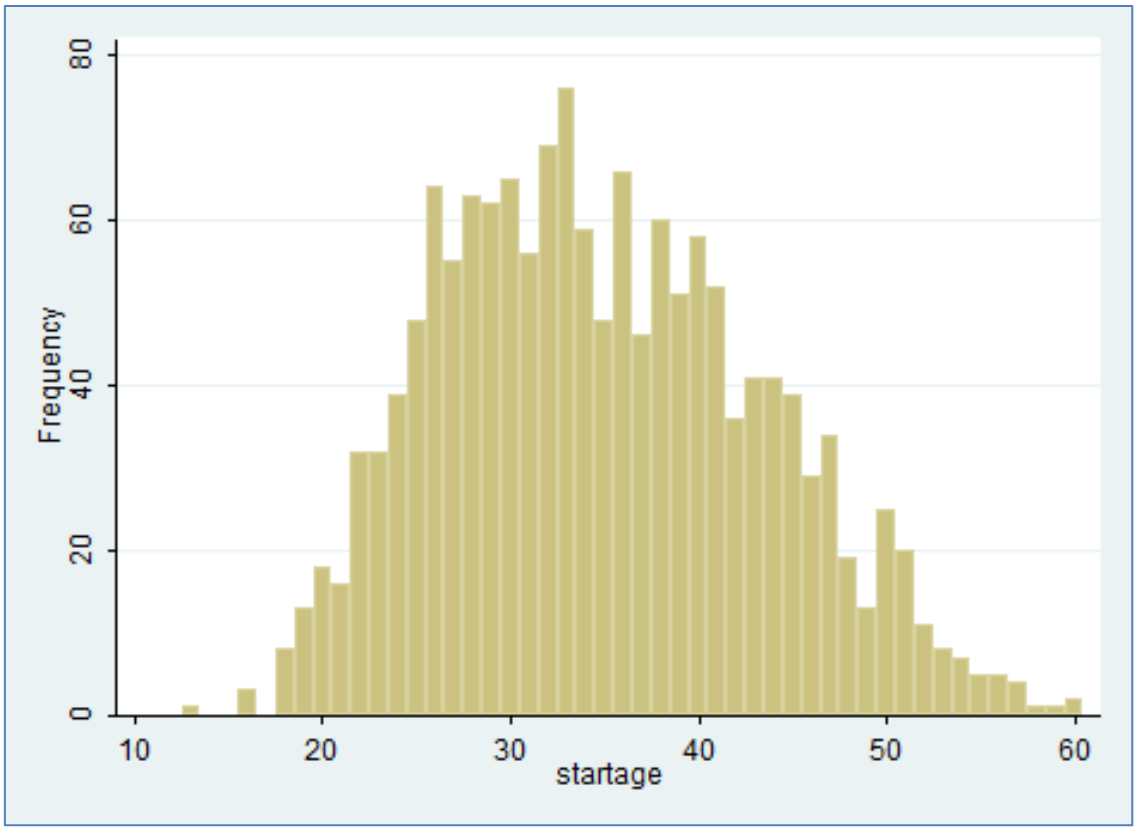

Fig4: Age distribution of the first start-up

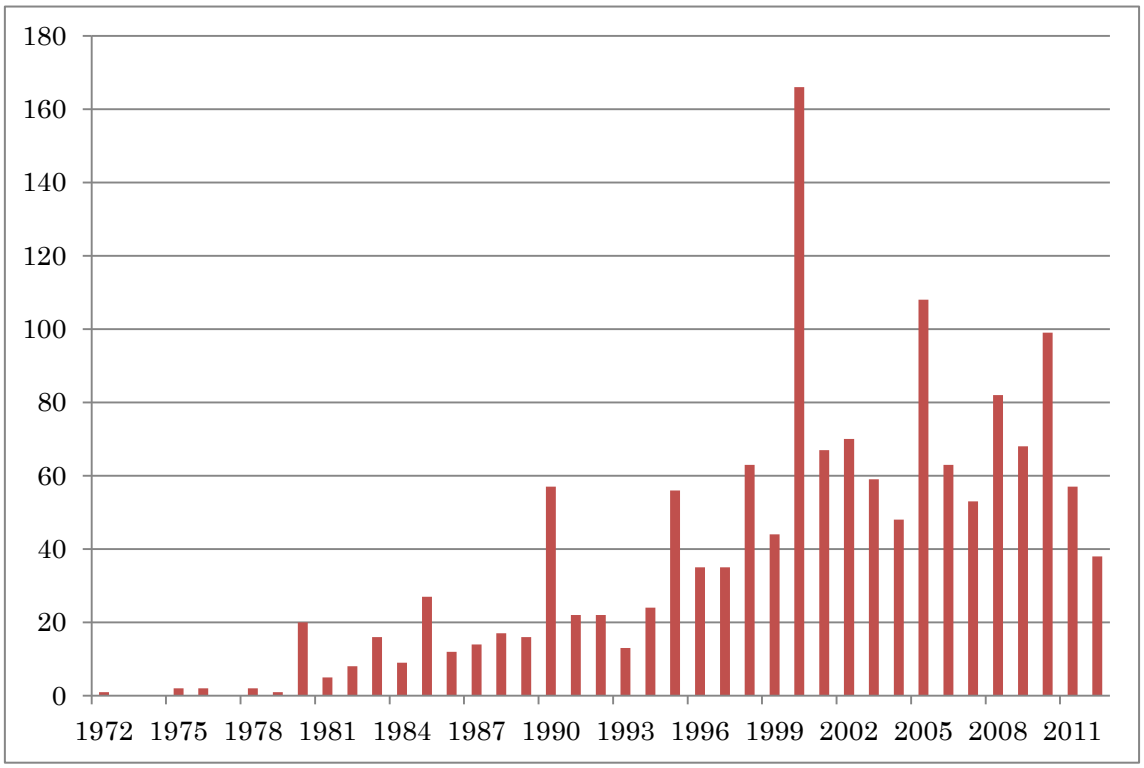

Fig5: The year of the first start-up

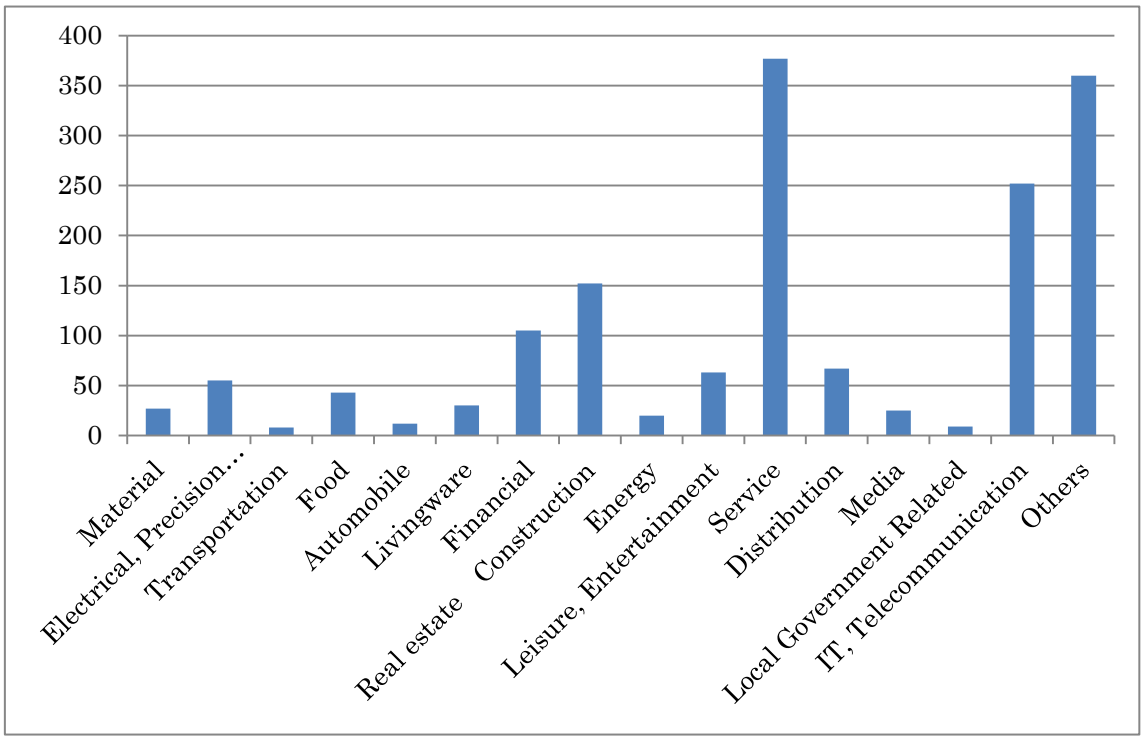

Fig6: Industry category of the first start-up

Table1: Explanatory Variables of Previous Research

	Ostgaard&Birley1996	Davidsson&Honig2003	Hsu2007
Dependent Variables	・sales, growth of sales ・profit, growth of profit ・employment, growth of employment	・foundation of a firm ・sales& profit within 18 months after foundation ・progress of gestation process ・progress of gestation process within 18 months after foundation	・valuation of a firm ・investment from VC
Human Capital	[firm level] ・pre-college level education ・years since foundation ・numbers of employer at the foundation	[entrepreneur level] ・years of education ・management class enrollment ・years of employer ・years of manager ・previous entrepreneurial experiences	[entrepreneurial team level] ・MBA ・Ph.D. ・years since foundation ・number of firms to raise in the past
Social Capital	[entrepreneur level] ・numbers of affiliated export association and industry association ・numbers of consultees in recent 6 months ・what to consult(acquisition of new sellers, investors and customers) ・time spent on networking ・numbers of acquaintances who are engineers or experts(diversity)	[entrepreneur level] ・parents who are founders/CEOs ・mental support from friends and family members ・neighbors and close friends who are founders/CEOs ・close communication with start-up support association ・affiliated a start-up team in the past ・affiliated a social club or a chamber of commerce ・married	[entrepreneurial team level] ・among the board members in post foundation, the ratio of persons who have acquainted to the original founding team members
Result	・pre-college level education is positive on scale of profit and growth of sales. ・information for acquisition of investment and customers are positive on growth of profit. ・longer time spent of networking are positive on numbers of employers.	・human capital is positive on a start of a business. ・social capital, especially being affiliated to a social club or a chamber of commerce is positive on a profit and sales.	・number of business to start in the past and social capital of a founding team are positive on valuation of a firm. ・in a sector of internet business, founding team members' doctoral degrees are positive on valuation of a firm.
データ	Questionnaire survey	Questionnaire survey	Questionnaire survey

Table2: Correlation Matrix of Explanatory Variables

	Average	Standard Deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.yrsexperience^2	196.85	306.54																						
2.yrsmanager	3.20	6.15	.43																					
3.mba	.01	.11	-.01	.00																				
4.start-up team	.25	.44	.24	.22	.11																			
5.investorexp	.05	.22	-.05	-.03	.24	.11																		
6.baormore	.19	.39	-.01	-.01	.16	.05	.02																	
7.pre-exp	.07	.25	.10	.18	.00	.26	.00	.00																
8.parentsheritage	.03	.18	-.01	-.02	.07	.02	.10	-.03	.12															
9.pre-excoll	.03	.17	-.03	.04	.09	.10	.08	-.01	.10	.02														
10.pre-exp	.08	.27	.00	.04	.10	.09	.03	-.01	.02	.02	.16													
11.pre-friends	.08	.27	-.06	-.03	.01	.03	.00	.01	.00	-.02	.16	.22												
12.pre-coff	.03	.16	-.02	.01	.02	.05	.09	.01	-.03	.01	.06	.07	.14											
13.pre-staff	.05	.21	.05	.09	.05	.10	.05	.06	.05	-.02	.05	.11	.08	.13										
14.post-excoll	.14	.34	.02	.03	.11	.10	.15	-.03	.11	.00	.35	.06	.09	.06	.01									
15.post-exp	.32	.47	.00	.00	.10	.07	.09	.00	.04	.05	.13	.47	.15	.07	.12	.05								
16.post-friends	.25	.43	-.03	-.01	.02	.02	.05	-.04	-.06	-.01	.03	.12	.39	.08	.06	-.01	.05							
17.post-cofstaff	.22	.41	.13	.11	.02	.12	.01	.03	.05	.01	.03	.11	-.01	.19	.28	.01	.00	-.03						
18.friendsentre	.29	.45	.04	.11	.02	.16	-.03	.00	.08	.02	.08	.15	.15	.07	.10	.04	.12	.08	.07					
19.familyentre	.15	.36	-.06	.01	.05	.05	.03	.01	-.01	.13	.02	.04	-.01	.01	.01	.03	.01	-.03	-.02	.19				
20.startage	34.84	8.55	.44	.31	-.04	.15	-.06	.05	.10	-.09	-.01	-.03	-.04	-.03	-.02	.01	-.05	-.02	.00	.02	-.07			
21.gender	.77	.42	.14	.12	-.01	.05	-.04	.04	.10	.00	.00	-.02	.01	-.01	.02	-.02	-.05	.01	.04	.07	.01	.10		
22.finance	.03	.18	.04	.04	.06	.07	.05	.00	.02	.03	.03	.20	.07	.13	.19	.01	.12	.01	.21	.08	.03	-.05	.06	
23.plan	.07	.26	.13	.12	.02	.17	-.03	.04	.07	.00	.01	.16	.06	.13	.26	.01	.13	.00	.29	.13	.02	.05	.12	.34

Table3: Binominal Logistic Analysis

	(1) Discovery an opportunity	(3) Found a firm	(5) Earn first profit
Human Capital			
1.yrsexperience^2	-.00***	-.00***	-.00**
2.yrsmanager	.05***	.05***	.03**
3.mba	1.62***	.34	.79
4.start-up team	.65***	-.18	.09
5.investorexp	2.08***	.68***	- .46**
6.baormore	-.51***	-.42**	-.23
7.pre-exp	—	—	.27
8.parentsheritage	—	—	.18
Social Capital			
pre entry			
9.pre-excoll	—	.46*	—
10.pre-exp	—	.03	—
11.pre-friends	—	-.62***	—
12.pre-coff	—	.68**	—
13.pre-staff	—	1.09***	—
post entry			
14.post-excoll	—	—	.32
15.post-exp	—	—	.15
16.post-friends	—	—	-.23
17.post-cofstaff	—	—	.11
network			
18.friendsentre	.91***	.01	.49***
19.familyentre	.76***	.42**	.06
Control Variables			
20.startage	—	—	-.00
21.gender	.72***	.56***	-.16
22.finance		1.18***	.13
23.plan		.63**	.29
year dummy70's	—	—	.30
year dummy80's	—	—	.57***
year dummy90's	—	—	1.02***
year dummy00's	—	—	.52*
N	7023	2201	1406
-2LL	1386.00(.00)	352.09(.00)	136.87(.00)
HR	14.19(.08)	13.74(.09)	10.86(.21)

*p<.05, **p<.01, ***p<.001

Table4: Ordered Logistic Analysis and OLS Regression Analysis

	(2) Period till foundation	(4) Period till first profit
Human Capital		
1.yrsexperience^2	.00*	.00
2.yrsmanager	-.01	-.01
3.mba	.44	.19
4.start-up team	-.10	-.02
5.investorexp	.24	.41**
6.baormore	.08	.04
7.pre-exp	-.10	-.08
8.parentsheritage	.30*	.04
Social Capital		
pre entry		
9.pre-excoll	.15	—
10.pre-exp	.35**	—
11.pre-friends	.06	—
12.pre-coff	.32	—
13.pre-staff	.31*	—
post entry		
14.post-excoll	—	.34**
15.post-exp	—	.14
16.post-friends	—	.05
17.post-cofstaff	—	.31**
network		
18.friendsentre	-.19	-.20*
19.familyentre	.09	-.19
Control Variables		
20.startage	-.02*	.00
21.gender	.07	-.00
22.finance	.29	.23
23.plan	.00	.09
year dummy70's	-1.65	.42
year dummy80's	-.35	.54*
year dummy90's	.01	.57*
year dummy00's	.36*	.56**
Constant	—	1.03**
N	1501	933
-2LL	90.00(.00)	—
F	—	2.67(.00)
R-squared	—	.06

*p<.05, **p<.01, ***p<.001

Table5: Two-sample Test of Proportion1

	Profitable entrepreneur	Non-profitable Entrepreneur	Significance of the difference
Abundance of information from consultees who are ex-colleagues/bosses Do the consultees have lots of acquaintances inside/ outside/ inside& outside of the start-up business sector?	12.06(1.05)	8.72(1.22)	*
Abundance of information from consultees who have experience in starting a business Do the consultees have lots of acquaintances inside/ outside/ inside& outside of the start-up business sector?	28.79(1.46)	22.82(1.81)	*
Abundance of information from consultees who are friends of the entrepreneur Do the consultees have lots of acquaintances inside/ outside/ inside& outside of the start-up business sector?	14.76(1.14)	17.44(1.64)	—

The numbers above indicate the ratio of those who answered “Yes” to the questions on the left row. ( ) is standard deviation. *p>.05, **p>.01

Table6: Two-sample Test of Propotion2

		Profitable Entrepreneur	Non-Profitable Entrepreneur	Significance of The Difference
What to consult with ex-colleagues/bosses				
	Important business decisions (except investment and loans)	7.17(.97)	5.38(.83)	—
	Trivial matters related to day-to-day business management (except for investment and loans)	5.82(.76)	3.34(.77)	*
	Investment and loans	2.81(.53)	2.78(.71)	—
	Philosophy for company executives	4.78(.69)	2.78(.71)	—
	Acquisition of cofounders, talented employees, business partners, customers or service providers	3.53(.60)	2.41(.66)	—
	Personal worries	3.85(.62)	2.60(.69)	—
What to consult with the persons who have experience in starting a business				
	Important business decisions (except investment and loans)	16.32(1.19)	13.54(1.48)	—
	Trivial matters related to day-to-day business management (except for investment and loans)	14.76(1.14)	11.50(1.38)	—
	Investment and loans	11.43(1.03)	9.28(1.25)	—
	Philosophy for company executives	15.80(1.18)	10.95(1.35)	**
	Acquisition of cofounders, talented employees, business partners, customers or service providers	10.60(.99)	6.31(1.05)	**
	Personal worries	4.99(.70)	3.71(.08)	—
What to consult with friends				
	Important business decisions (except investment and loans)	6.76(.81)	7.61(1.14)	—
	Trivial matters related to day-to-day business management (except investment and loans)	7.90(.87)	9.09(1.24)	—
	Investment and loans	6.03(.77)	6.86(1.09)	—
	Philosophy for company executives	5.71(.75)	4.64(.91)	—
	Acquisition of cofounders, talented employees, business partners, customers or service providers	6.24(78)	4.09(.85)	—
	Personal worries	9.36(.94)	9.09(1.24)	—

The numbers above indicate the ratio of those who answered “Yes” to the questions on the left row. ( ) is standard deviation. *p>.05, **p>.01

Appendix 1: Questions Regarding Social Capital

【To respondents of who have experience in starting a business, totalled 1501】

（Pre-foundation）

Q. What did you do for foundation of a firm? (Multiple answers allowed)

1. Researched deeply on start-up and the industry sector
2. Consulted with colleagues/bosses in the former employer
3. Consulted with persons who have experience in starting a business
4. Consulted with friends
5. Sought cofounders
6. Sought talented employees/ staff
7. Prepared a business plan
8. Requested to raise funds
9. Others
10. Unknown

（Post-foundation）

Q. Who was helpful consultant when contemplating further expansion/ stabilization of the business after it was launched? (Multiple answers allowed)

1. Colleagues/bosses in the former employer
2. Persons who have experience in starting a business
3. Friends
4. Personnel within the firm such as cofounders, business partners and talented staff
5. Others
6. None

【To respondents of who do not have experience in starting a business, totalled 5522】

Q. Have you ever tried entrepreneurial activity below? (Multiple answers allowed)

1. 1. Researched deeply on start-up and the industry sector
2. Consulted with colleagues/bosses in the former employer
3. Consulted with persons who have experience in starting a business
4. Consulted with friends
5. Sought cofounders
6. Sought talented employees/ staff
7. Prepared a business plan
8. Requested to raise funds

9. Others

10. None of the above

[To all the respondents, totalled 7023]

Q. Which of the following describes your parents? (Multiple answers are allowed)

1. Founders

2. CEOs

3. Company executives

4. Investors

5. None of the above

Q. Which of the following describes your siblings? (Multiple answers are allowed)

1. Founders

2. CEOs

3. Company executives

4. Investors

5. None of the above

Q. Which of the following describes your acquaintances? (Multiple answers are allowed)

1. Founders

2. CEOs

3. Company executives

4. Investors

5. None of the above