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Firm Size and Business Startup Reasons of Japanese Workers

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Abstract

Small firms are more likely to produce entrepreneurs than large firms. This study empirically examines a potential mechanism that might explain this phenomenon, observed in previous research, using Japanese survey data of employees planning to start businesses. The data contain information on employer, job, and personal characteristics and also indicates the reasons for starting the businesses. The results from a principal component analysis of various startup reasons identify four separate component factors that account for 70 percent of variance: a need for self-fulfillment, a need for flexibility in work schedule, a need to solve a career problem, and a need to secure a livelihood. I empirically examine the relationship between rating scores for these factors and the size of employers. The results from multivariate regression models indicate that the score for a need to solve a career problem was significantly higher for those working for small firms, while none of the other three factors are significantly different between employees of large and small firms. In addition, the results also suggest that the relationship between the need to solve a career problem and employment of small firms is associated with the tendency for middle managers. The implications of these findings for researchers and policy-makers are discussed.

Key words: Entrepreneurship; Startup reasons; Firm size
JEL classification: M13; L26

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Firm size and business startup reasons of Japanese workers

Ryuichiro Tsuchiya

There has been general agreement about the importance of new firm creation and its desirable effects on economies. Since Birch's (1979) study on job creation by small businesses, a considerable amount of research has confirmed his findings that small businesses are a major source of job creation. However, Acs, Armington, and Robb (1999) found that there is a net destruction of existing jobs among older businesses whether small, medium, or large. This suggests that new businesses, not small businesses themselves, provide a major force for creating new jobs.

Given the economic significance of new firm creation, exploration of the factors that affect the supply and demand of entrepreneurs has been of practical, as well as academic, interest. Some research has sought to identify the environment in which new firm formation is more likely to occur. Key environmental factors that have been argued to lead to the formation of new firms include technological change (Tushman and Anderson, 1986), industry dynamics (Klepper, 2002; Sonobe, Kawakami, and Otsuka, 2003), wage differentials between self and paid employment (Rees and Shah, 1986), market structure (Acs and Audretsch, 1990), and regional infrastructure (Fritsch, 1992; Okamuro, 2006). On the other hand, the other school of thought has focused on individual-level factors, including propensity to take risk, tolerance for ambiguity, need for achievement, and decision-making patterns (Begley and Boyd, 1987; Busenitz and Barney, 1997) which differentiate firm founders from the rest of society. The school has also focused on individual differences in non-psychological characteristics (Bates, 1990; Harada, 2003; Honjo, 2004) and differences in founding and growth strategies (Yasuda, 2005; Newbert, Kirchhoff and Walsh, 2007).

In these streams of research, recent years have seen a growing interest on the linkage between the properties of firms and the likelihood of employees leaving to start their own

businesses. To date, empirical research with regional data has found empirically strong and robust relationships between the share of small firms in the total employment of region and the formation rate of new firms (Fritsch, 1992; Reynolds et al., 1994; Gerlach and Wagner, 1994; Spilling, 1996). However, the underlying mechanism for this observation remained unclear. Only relatively few researchers have explored the effect of firm size on transition rate at the level of individual (Gompers, et al., 2005; Dobrev and Barnett, 2005; Sørensen, 2007). Despite a growing number of studies, research to date has offered little explanation as to why small firms are more likely to produce entrepreneurs.

There are important reasons for why it is desirable to give explanation to the phenomenon. First, exploring a mechanism of the phenomenon may carry policy implications for policy-makers seeking to promote entrepreneurship among workers. It is natural to expect that small firms produce more entrepreneurs than do large firms, given that small firms account for 66 percent of total employment in Japan (Small and Medium Enterprise Agency, 2009). What added to this direct observation is that Yahata's (1994) study using the database of the Employment Status Survey, though largely descriptive, revealed that the category of firms with less than 30 workers were producing a disproportionate number of newly self-employed persons in Japan. Thus, gaining a better understanding of why small firms are good generators of entrepreneurs could also contributes to the debate on the role of small business in Japanese economy. Second, employers could benefit from learning about why some employees leave to start their own businesses. Employers who seek to retain crucial employees could be better informed to identify potential quitters who wish to setting up their own businesses which will likely be direct competitors to themselves.

In an attempt to explore the underlying mechanism effectively, I adopted a questionnaire survey designed specifically for employees who plan to start their businesses, which enabled me greatly to identify, among others, their several motives for starting

businesses, and the effect on the size of employers on these motives. A particular characteristic of the survey design adopted in this paper, asking employees planning to start businesses about reasons while they are still in the pre-startup phase, helped overcome a methodological barrier that researchers often face when attempting to identify a major startup motive. A serious concern has been the problem of retrospection, where researchers interview entrepreneurs about startup reasons long after they got into business. Such retrospective inquiry has been criticized that an accurate measurement is often not possible due to loss of memory and a bias that makes people justify their behaviors. There is also the possibility of survival bias, as some may have dropped out of track for business ownership as time passes. To date, only few studies have successfully solved this problem (Carter, Gartner, Shaver, and Gatewood, 2003; Schjoedt and Shaver, 2007). For the research on entrepreneurship in Japan, relatively fewer studies have explored startup reasons. Some of these include Small and Medium Enterprise Agency (2006) but the study relied on retrospective questions. This research is capable of minimizing this problem, as I examined the startup reasons while respondents were still in the initial stage of setting up businesses.

THEORETICAL PERSPECTIVE

The section below reviews related literature, and introduces four theoretical perspectives that might explain the relationship between the size of firms and the tendency of employees to start their businesses. Testable hypotheses are proposed for each perspective.

Review of the Literature

Parker (2009) examined relative effectiveness of three alternative theories that could help explain why small firms are more likely to produce entrepreneurs: the transmission theory; blocked mobility theory; and self-selection theory. The transmission theory is based on the

notion that it is easier for small firms than large firms to create opportunities to learn critical skills, attitudes, knowledge, resources, and social connections that help develop a career in entrepreneurship. On the other hand, the self-selection theory is based on the observation that persons with particular personality are more likely to choose to become employees of small firms, and the same persons are also more likely to start their own businesses sometime in the course of their careers. The third theory, blocked mobility theory assumes the presence of "dual labor market", arguing that a primary motive of employees of small firms to start their businesses is frustrations with their career opportunities.

Using a longitudinal database of the British labor market, Parker (2009) argued that neither the transmission theory nor the blocked mobility theory received compelling empirical support, whereas there was an indication of self-selection behavior. On the other hand, Sørensen (2007) tested empirically the self selection theory using a longitudinal database of the Danish labor market. The results from career tracking models provided evidences to suggest that the effect of firm size is not the spurious consequence of self-selection behavior. Finally, Tsuchiya (2009) examined empirically whether employees of small firms are pulled toward opportunities, or pushed by frustration and dissatisfaction with a job, by using a repeated cross-sectional database of Taiwan's labor market. The results of the study suggested that a dominant motive of those working for small firms is pull-based rather than push-based.

Interpretation of some inconsistency among findings of these studies is complicated in part by the fact that it is very difficult for researchers to distinguish firm founders into several distinct categories according to a major motive for starting businesses. For example, a person who plans to pursue a chance for self fulfillment aggressively might also be frustrated with a current job to the similar extent. The coexistence of competing motives within the same person has been criticized on methodological grounds. This issue is reflected in the

research design adopted by this paper. In this paper, I first subjected the data of subjective ratings that respondents gave for various items of startup reasons to a principal component analysis to identify major motive factors of startup, and then tested the effects of firm size on identified motives by using a multivariate regression model, which are able to minimize the problem of coexistence of multiple motives.

Yet, another issue that researchers should consider is institution of labor markets and labor relations. Studies using regional data have suggested that the intensity of new firm formation in a country is dependent on the degree of legal protection of job security and the mobility of labor (Choi and Phan, 2006; Van Stel, Storey, and Thurik, 2007). Japanese labor market is often described as very rigid and inflexible, in which employment protection of regular employees and preferences of recruiting of large firms for new graduates have suppressed the expansion of external labor markets. These labor institutions create barriers for the entry of employees of small firms into internal labor markets of large firms. It is likely that startup motives of employees in Japanese small firms are somehow different from those of employees of small firms located in more dynamic and flexible national labor markets. Thus, cross-country comparison of studies should be interpreted with caution.

Transmission Theory

The essential argument of the transmission theory is that small firms create learning opportunities for potential entrepreneurs in at least three important ways. First, working in small organizations requires flexibility of approach (Dobrev and Barnett, 2005; Sørensen, 2009). This may influence the attitudes and mind-set of members of organizations in ways that make them more likely to pursue uncertain opportunities in entrepreneurship. Second, experience of working for small firms may facilitate the development of critical skills necessary for running new organizations, and may therefore raise the expected value of career

opportunities in entrepreneurship. If successful entrepreneurship require a command of a wide variety of roles and responsibilities, then persons with diverse experience and expertise will find entrepreneurial opportunities more attractive (Lazear, 2005). The diversity of work experiences should be on average higher among employees of small firms, implying that the rates of entry into business ownership will be higher among them (Sørensen, 2009). Finally, small firms may give employees more frequent and emotional contacts to a network of customers and suppliers, which may increase the chance to identify market opportunities and capacity to mobilize social resources (Dobrev and Barnett, 2005; Sørensen, 2009). These arguments suggest that employees of small firms are more likely to emphasize the aspect of personal fulfillment as compared to those of large firms. Thus, I propose the following:

> Hypothesis 1a: For employees who wish to start new businesses, those working for small firms are more likely than those working for large firms to stress a need for personal fulfillment as a major startup motive.

Blocked Mobility Theory

Another explanation is based on the blocked mobility theory, arguing that marginal workers excluded from attractive job opportunities available in the internal labor markets of large firms find a career in entrepreneurship as a solution to the problem. The organizational structure of small firms is flat relative to that of large firms, which makes career advancement within organization less attractive as employees climb career ladder (Dobrev and Barnett, 2005). Thus, long-tenured employees of small firms often try to move to other firms but face obstacles in moving to larger firms. In Japan, these obstacles are more problematic because of the segmentation of labor markets and the preferences of large firm recruiting for new graduates. These arguments lead to the following hypothesis:

> Hypothesis 1b: For employees who wish to start new businesses, those working for small firms are more likely than those working for large firms to stress a lack of esteem from the employer as a major startup motive.

Self-selection Theory

The self-selection theory argues that people choose jobs consistent with their values to work, and an innate basis for autonomy that will be likely to lead people to start own businesses also has an effect on a preference for seeking jobs at small firms (Sørensen, 2007). These arguments lead to the following hypothesis.

> Hypothesis 1c: For employees who wish to start new businesses, those working for small firms are more likely than those working for large firms to stress a need for autonomy in work as a major startup motive.

Necessity Theory

What could be added to this set of theories is that the reason that employees of small firms start businesses is necessity of earning a livelihood. On average small firms pay more variable wages than large firms, in part because the latter are more diversified than the former (Parker, 2009). This makes small firms less able to reduce the risk of business cycle shock, and therefore employees face the volatility of income. Thus, employees of small firms are more vulnerable to the risk of poverty. This leads to the argument that the high rate of transition observed for employees of small firms is simply reflecting a high rate of failure for employees of small firms to earn a living.

Hypothesis 1d: For employees who wish to start new businesses, those working for small firms are more likely than those working for large firms to stress necessity to earn a livelihood as a major startup motive.

RESEARCH METHODOLOGY

Data

Testing hypotheses proposed in the previous section will be challenging, requiring data on individuals who are in the initial stages of starting businesses. Screening from the population at large to identify people who might be starting businesses needs considering a balance between costs and benefits, because transition to business ownership is generally a rare event[3]. For this reason, I chose not to attempt to collect a representative sample, and instead focused on screening from a more refined set of population who would be likely to experience entrepreneurial transition. Although this approach obviously limits the generalizability of possible results of this study, it improves the ability of this study to achieve depth of data on startup reasons.

The database for this study was on-line survey responses collected from 28,495 participants of Yahoo! Research who live in Japan. Candidates of nascent entrepreneurs were initially identified from participants who were registered as monitors of Yahoo Japan Value Insight in two phases. In the first phase, a question in the first screening was designed to identify people who wish to start businesses.

- In the future, do you want to start your own business?

A respondent could choose from four options to the question (yes to great extent; yes,

[3] The databases taking the approach of screening from a large number of candidates of nascent entrepreneurs include the Panel Study of Entrepreneurial Dynamics (PSED). The PSED employed a market research company to screen a total of 64,622 households in the United States using the survey procedure described in detail in Schjoedt and Shaver (2007). Despite the relatively large size of population, the PSED ended up collecting 553 responses from nascent entrepreneurs.

but only if it is possible to do so; no extent; I have already started my business). Only individuals falling into “yes to great extent” and “yes, but only if it is possible to do so” were considered for the second screening.

The following question served as the second screening, designed to identify people who were prepared to start businesses in very near future.

- Have you already created your business plan, or developed your business idea?
- Are you planning to start your business within three years?

A respondent could answer “no” or “yes” to the questions. The affirmative answers to both questions were necessary for respondents to be included in the study. In the second phase of the research, 3,247 respondents who satisfied the inclusion criteria described above were sent a detailed web questionnaire with a response rate of 74.6 percent.

Sample

From effective responses, I constructed a sample for current analysis, guided by two principles. First, because the behaviors and motives of serial entrepreneurs are likely to be different from the first-time entrepreneurs, I restricted the analysis to the first transition to business ownership. Second, to avoid self-justification bias and survival bias, employees spending a long time after they had the first intension to start a business should not be used for analysis. As a result, the sample consists of employees who (a) have no prior experience of business ownership; (b) have spent less than five years ever since they had intension to start a business; (c) are employed regularly on a full-time basis, including middle managers and general employees; (d) do not work for the public sector and primary industry (agriculture and extracting industries).

The timeframe of five years was used because it could cover the almost all possible range of the time when nascent entrepreneurs spend to put their businesses on the track. The

average time necessary for gestation period has been found to be one year, and 90% completed the gestation within three years (Reynolds and Miller, 1992).

I examined a demographic distribution of the sample of employees planning to start businesses used for this study and general statistics of regular employees available from Labor Force Survey, a nationally representative sample of work force in Japan. Comparing structures of age and gender indicates that the individuals in their 30s and 40s are overrepresented in my sample of employees who plan to start businesses. This might be reflecting on overrepresentation of people who plan to start businesses in these age groups and also younger generations, who are likely to be registered as monitors of web-based research.

Measures of Business Startup Reasons

Evaluations of respondents for ten items of startup reasons were subjected to a principal component analysis to identify latent needs for starting a business. Three items represent a lack of esteem from the employer (dismal prospect for organization, frustration with wage, frustration with career prospect). Two items represent a need for self fulfillment (to make the best use of technological specialty and knowledge, to develop an innovative idea). Two items represent a need for autonomy in work (free to adopt my approach to work, get a greater flexibility for personal life). Two items represent necessity to earn a livelihood (to be respected in society, to earn livelihood income). Finally, I also added an item (to earn a larger income) related to a desire for financial success.

All items were asked by the question, “to what extent are the following reasons important to you in starting your own business?” Responses were given on a one-to-five scale: one, “to no extent”; two, “little extent”; three, “some extent”; four, “great extent”; five, “to a very great extent”.

Scores for rating to these reasons items were subjected to a principal component factor analysis. The results of the analysis will be reported in next section. The produced scores for motive factors will be then used as dependent variables of the model of hypothesis test.

Measures of Work Conditions

Firm size. I measured firm size as the number of workers in the firm. Because the questions which appear in the survey asked respondents to indicate which of 5 size-bands describes employer, I used dummy variables to differentiate between different size-categories. Five size categories were used: less than 20 workers, 20 to 99 workers, 100 to 299 workers, 300 to 999 workers, and 1000 workers or more.

Firm age. The age of the firm is measured as years elapsed since the establishment of the firm. Because the question which appears in the survey asked respondents to indicate which of three age-bands represented employer, dummy variables were used. I used three age categories: 27 years or younger, 28 to 62 years, 63 years or older.

Tenure. I measured tenure of employees as the years of current job experience. Because respondents were asked to select which of 9 bands represented job tenure, I used dummy variables. Because a distribution of job tenure in the sample is skewed toward employees with tenures of less than 20 years, I settled on four tenure categories: 5 years or less, 6 to 10 years, 11 to 15 years, and 20 years or more.

Control Variables

To complete the model of startup motive, I included a set of control variables. The model included a dummy variable coded one for females (*female*), the number of years of education completed (*years of education*), dummy variables for the person's age at the time of survey (*individual's age: 20-29 years old; individual's age: 30-39 years old; individual's age: 40-49*

years old), and a dummy variable coded one for married persons (*married*).

The model also included the amount of wage and salary income received in a year (*yearly wage*). Because the questions which appear in the survey asked respondents to select which of four bands describes the amount of income, dummy variables were used. I used four categories: 2.5 million yen or less, 2.5 million to 5 million yen, 5 million to 10 million yen, 10 million yen or more.

It is also important to separate the effect of duration of current job and the effect of mobility of a person in her entire career history. The model thus included a measure of career mobility by counting the number of job changes since leaving school (*number of job changes*). The set of control variables also included a dummy variable coded one for middle managers to account for difference in job responsibility (*middle manager*).

Estimation Strategy

I used a multivariate regression method to test the effects of firm size on latent motives. Particular personality of persons which is unobserved to researchers, such as a preference for autonomy in workplace that affects one startup motive has an effect on the other. For example, preference of a person for autonomy that makes her consider flexibility in work schedule as more important may be connected closely with an innate basis for self fulfillment. Psychological studies have documented a number of common traits among successful entrepreneurs (for a review, see Begley and Boyd, 1987). Accounting for personality traits in the models with multiple dependent variables is always challenging, but methodologically, the most widespread method of addressing this sort of problem is to use a multivariate regression method, which analyzes multiple dependent variables jointly in a single statistical method rather than each separately.

Descriptive Statistics

The descriptive statistics in Table 1 presents an overview of the sample used for analysis. One in five persons was female, and the average person received 18 years of education. The most frequent category for individual's age was age of 30s, reflecting that the sample is skewed toward younger generations, and six in ten were married. The most frequently occurring group of tenure was employees with tenures of five years or less, and the most frequent category of firm size was firms with less than 20 workers. The most frequent category of the age of firms was 27 years or less. 35 percent of employees held middle management positions, and the average number of job changes a person had was 1.7. The most frequent category of the amount of wage or salary income in a year was from 2.5 million to 5 million yen.

RESULTS

I first subjected ten reason items to a principal components analysis (varimax rotation), where the eigenvalue was greater than one. The analysis produced four factors, accounting for a total of 70.1 percent of the variance. As shown in Table 2, the first factor, a need to solve career problems, involved four items, the second, a need for work flexibility involved two items, the third, a need for self fulfillment involved two items, and a need for livelihood security had two items[4]. To predict dependent variables, I calculated scores for each of the four reason scales.

The predicted factor scores showed consistency with measures of overall life and job satisfaction scores available from survey data. As shown in Table 3, the correlation coefficients of job satisfaction score with a need to solve career problem, a need for work flexibility, and a need for livelihood security were -0.29, -0.20, -0.15 respectively, and all of

[4] The first factor, career problem involves the item, "earn a larger income". However, loading coefficient is 0.34, which is significantly lower than the coefficients of other items in the same factor.

coefficients were significant statistically, whereas the correlation coefficient between job satisfaction score and a need for self fulfillment was not significant statistically. This suggests that a need to solve career problem, a need for work flexibility, and a need for livelihood security were associated with a low level of job satisfaction. The correlation coefficients of the life satisfaction score with a need to solve career problems, a need to secure livelihood were -0.15 and -0.10 respectively, and both were significant. The need for work flexibility and that for self fulfillment were not significantly correlated with the life satisfaction score. This suggests that a need to solve career problem and that to secure livelihood is associated with inadequacy of satisfaction with job and life.

Table 4 presents model estimates of major startup motives using a multivariate regression method. Model 1 included all variables except for firm-size and firm-age covariates. The effect of individuals in their 20s and 30s on a need to secure livelihood were negative and significant. This implies that for employees who wish to start businesses, those of 50 years old or more have a larger need to secure livelihood as compared to younger generations. The effect of married persons on a need for self fulfillment was significant and positive, implying that people planning to start businesses have a large need for self fulfillment if they are married. The effects of wage income of 2.5 million yen or less and that of 2.5 million to 5 million yen on a need to solve career problem were positive and significant, implying that career problems are often expressed by low-income earners. The effect of employees with job tenure of five years or less, and those with job tenure of six to ten years on a need for self fulfillment were positive and significant, implying that short-tenured employees are more likely to stress that kind of need as a startup motive.

I tested proposed hypotheses using Model 2 that includes all covariates, and this increases model fit considerably. Firms having less than 20 workers, those having 20-99 workers, those having 100-299 workers, and those having 300-999 workers have positive and

significant effects for a need to solve career problem. This implies a need to solve career problem is higher among employees of small firms planning to start businesses (lending support to Hypothesis 1b). On the other hand, the effects of small firms were significant neither for a need for self fulfillment (not offering support for Hypothesis 1a), for a need for work flexibility (not offering support for Hypothesis 1c) nor for a need to secure livelihood (not offering support for Hypothesis 1d). The joint effects of firms having less than 20 workers, firms having 20-99 workers, firms having 100-299 workers, and firms having 300-999 workers on a need to solve career problem were significant ($F = 2.25$; $p < 0.10$). This suggests that employees of small firms who wish to start businesses have higher level of needs to solve career problems as compared to those of large firms. On the other hand, there was no significant difference between employees of large and small firms in both the level of a need for self fulfillment and the level of a need for work flexibility. The effects of young firms were statistically significant for neither of startup motives.

Table 5 presents separate reestimates of this model for subsamples of middle managers and general employees. In Model 1, I used a subsample of middle managers to test the effects of firm size, while in Model 2 I used a subsample of general employees. In Model 1, the effects of firms with less than 20 workers and of firms with 20 to 99 workers on a need to solve career problem were positive and significant, whereas in model 2, the effect of firm size on a need to solve career problem is limited for those working for firms with less than 20 workers. This suggests that the effects of small firms on a need to solve career problem is associated with the tendency for middle managers.

DISCUSSION

The results of this study provide a strong support for the explanation based on the notion that the reason for why small firms produce entrepreneurs is that employees of small firms are

frustrated with their career prospects. The results from multivariate regression models suggested that those working for small firms are more likely to stress a need to solve career problems as a major startup motive. This conclusion is particularly robust when it comes to a motive of middle managers of small firms. This may reflects that a path to levels above middle management becomes less clear in small firms. The finding can also be interpreted as the consequence of exclusion of employees of small firms from labor market.

The results have not offered compelling support to the self-selection perspective. This is not, however, the same as meaning that this study was effective in accounting for all possible patterns of self-selection behavior. The preference of individuals explored in this study was based on a desire for autonomy. However, there has been an alternative view that less risk-averse individuals are more willing to become employees of small firms on the assumption that small firms on average pay more variable wages (Parker, 2009). Future research need to explore this issue empirically. It could also examine whether workers who left small firms create more or less successful ventures compared to those who left large firms.

I would not consider it right to generalize about characteristics of entrepreneurs from the results of this paper. Clearly, the sample population from which data were drawn was not generally representative. First, depth of analysis gained through the measurement of detailed startup reasons, and data of job and workplace characteristics comes at the expense of breadth that could be achieved through a larger sample of employers and employees. One might worry, for example, the generalizablity of results toward older generations underrepresented in the sample of this study. Second, approach to focus on general workforce regardless of industry limited the ability of this study to examine how market and technology characteristics might interact with the size of firms and major motives of employees to start businesses. For example, a more detailed analysis of emerging and declining industries might

demonstrate the significance of the industry structure, the stage of industry life cycle, and technological regime.

Managerial implications from the findings of this study is that small employers who seek to retain employees need to be aware that potential quitters who wish to setting up their own businesses could be better found among middle managers frustrated with their career opportunities. The findings of the study also have several implications for policy makers seeking to promote entrepreneurship. The empirical regularity between small firms and the rate of employees leaving to start their own businesses has suggested potential benefits of considering the indirect effects of policies designed to support and sustain existing small firms (Sørensen, 2007). For example, such policies have been considered desirable because they may not only promote the development of existing small firms but also help increase the supply of entrepreneurial talent in an economy. Based on this notion of small firms inspiring persons to pursue entrepreneurial opportunities, educators and activists who seek to develop an entrepreneurial mind-set among students have introduced programs designed to support entrepreneurship internship for employees in small companies. However, the findings of this study suggested that employees of Japanese small firms start a business mostly because they are frustrated with their careers opportunities, and the findings offered little compelling evidence of the transmission theory. This suggests that the potential effectiveness of such kind of programs can be compromised unless the selection of firms for internship programs is managed correctly.

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Table 1 Descriptive statistics and correlations †

		Mean	S.D.	Min	Max	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1.	Female	0.18	0.39	0.00	1.00										
2.	Years of education	17.55	2.05	12.00	21.00	0.02									
3.	Individual's age: 20-29 years old	0.11	0.31	0.00	1.00	0.04	-0.02								
4.	Individual's age: 30-39 years old	0.46	0.50	0.00	1.00	0.05	0.05	-0.33							
5.	Individual's age: 40-49 years old	0.33	0.47	0.00	1.00	-0.07	-0.06	-0.25	-0.65						
6.	Married	0.59	0.49	0.00	1.00	-0.15	0.00	-0.29	-0.10	0.19					
7.	Tenure: 5 years or shorter	0.38	0.48	0.00	1.00	0.12	0.06	0.40	-0.02	-0.18	-0.26				
8.	Tenure: 6-10 years	0.24	0.43	0.00	1.00	-0.06	0.02	-0.13	0.27	-0.12	0.01	-0.44			
9.	Tenure: 11-15 years	0.19	0.39	0.00	1.00	0.01	-0.02	-0.17	0.06	0.06	0.05	-0.37	-0.27		
10.	Middle manager	0.35	0.48	0.00	1.00	-0.21	0.00	-0.14	-0.21	0.18	0.25	-0.20	-0.05	0.12	
11.	Number of job changes	1.65	1.73	0.00	10.00	0.06	-0.25	-0.12	-0.02	0.08	-0.03	0.29	0.01	-0.09	-0.01
12.	Yearly wage: 2.5M Yen or less	0.10	0.30	0.00	1.00	0.13	-0.08	0.16	0.01	-0.15	-0.13	0.09	-0.01	-0.04	-0.21
13.	Yearly wage: 2.5M-5M Yen	0.45	0.50	0.00	1.00	0.09	-0.16	0.10	0.12	-0.11	-0.16	0.17	0.08	-0.06	-0.22
14.	Yearly wage: 50M-100M Yen	0.39	0.49	0.00	1.00	-0.16	0.12	-0.16	-0.07	0.16	0.19	-0.17	-0.09	0.12	0.27
15.	Firm size: 1-19 workers	0.33	0.47	0.00	1.00	0.00	-0.21	0.00	0.03	-0.02	-0.08	0.08	0.02	-0.01	-0.04
16.	Firm size: 20-99 workers	0.23	0.42	0.00	1.00	-0.07	-0.04	0.00	0.01	-0.03	0.01	0.08	-0.01	-0.05	-0.05
17.	Firm size: 100-299 workers	0.14	0.35	0.00	1.00	0.07	-0.03	0.03	0.00	-0.03	0.00	-0.03	0.02	-0.02	0.06
18.	Firm size: 300-999 workers	0.13	0.34	0.00	1.00	0.07	0.14	-0.03	0.05	-0.04	-0.04	-0.05	-0.03	0.06	-0.03
19.	Firm age: 27 years or younger	0.44	0.50	0.00	1.00	0.04	-0.09	0.06	0.06	-0.07	-0.13	0.30	-0.04	-0.06	-0.09
20.	Firm age: 28-62 years	0.38	0.49	0.00	1.00	-0.08	0.03	-0.03	-0.02	0.03	0.04	-0.19	0.06	0.03	0.06

Table 1 (continued)

11.	12.	13.	14.	15.	16.	17.	18.	19.
-0.03								
0.13	-0.30							
-0.09	-0.26	-0.73						
0.21	0.14	0.10	-0.10					
0.02	0.00	0.10	-0.07	-0.39				
-0.05	-0.04	0.04	-0.04	-0.29	-0.22			
-0.14	-0.04	-0.05	0.08	-0.28	-0.22	-0.16		
0.23	-0.04	0.12	-0.04	0.22	0.03	0.03	-0.11	
-0.12	0.05	-0.05	0.01	-0.06	0.02	0.03	0.02	-0.70

† S.D.: standard deviations

Table 2 Factor loadings for reasons items: *n* = 294[†]

Factor	1	2	3	4
	Career problem	Work flexibility	Self fulfillment	Livelihood Security
Variance	2.43	1.665	1.554	1.361
Percentage variance accounted for	0.243	0.167	0.155	0.136
To earn a larger income	**0.338**			
Dismal prospect for organization	**0.524**			
Frustration with wage	**0.547**			
Frustration with career prospect	**0.481**			
Free to adapt my approach to work		**0.479**		-0.341
To get a greater flexibility for personal life		**0.739**		
To make the best use of technological specialty and knowledge			**0.624**	
To develop an innovative idea			**0.701**	
To earn livelihood income				**0.720**
To be respected in society		0.347		**0.532**

[†] Factor loadings smaller than 0.30 have been suppressed.

Table 3 Correlations of factor scores with overall job and life satisfaction scores

	Career problem		Work flexibility		Self fulfillment		Livelihood security		Job satisfaction score	
Career problem										
Self fulfillment	0.42	***								
Work flexibility	0.28	***	0.31	***						
Livelihood security	0.20	***	0.14	**	0.08					
Job satisfaction score	-0.29	***	-0.20	***	0.00		-0.15	**		
Life satisfaction score	-0.15	***	-0.09		0.09		-0.10	*	0.43	***

* $p < .10$; ** $p < .05$, *** $p < .01$; two-tailed tests.

Table 4 Multivariate multiple regression models of major motives for starting new businesses †

	Model 1				Model 2			
	Career problem	Work flexibility	Self fulfillment	Livelihood security	Career problem	Work flexibility	Self fulfillment	Livelihood security
Female	-0.396	0.216	0.123	-0.115	-0.373	0.185	0.113	-0.088
	(0.261)	(0.216)	(0.204)	(0.187)	(0.261)	(0.217)	(0.207)	(0.189)
Years of education	0.070	-0.019	0.035	0.010	0.107**	-0.023	0.041	0.020
	(0.053)	(0.044)	(0.041)	(0.038)	(0.054)	(0.045)	(0.043)	(0.039)
Individual's age: 20-29 years old	-0.092	0.021	0.473	-0.755**	0.222	-0.079	0.495	-0.685*
	(0.498)	(0.412)	(0.391)	(0.358)	(0.508)	(0.422)	(0.403)	(0.368)
Individual's age: 30-39 years old	-0.050	-0.003	-0.045	-0.658**	0.091	-0.052	-0.028	-0.608**
	(0.389)	(0.322)	(0.305)	(0.279)	(0.391)	(0.325)	(0.311)	(0.284)
Individual's age: 40-49 years old	0.202	0.321	0.033	-0.291	0.399	0.270	0.063	-0.241
	(0.376)	(0.311)	(0.295)	(0.270)	(0.380)	(0.316)	(0.302)	(0.276)
Married	0.211	0.176	0.603***	-0.135	0.280	0.173	0.623***	-0.125
	(0.214)	(0.177)	(0.167)	(0.153)	(0.214)	(0.178)	(0.170)	(0.155)
Yearly wage: 2.5M Yen or less	0.956*	0.164	0.079	-0.141	0.619	0.308	0.120	-0.138
	(0.556)	(0.460)	(0.436)	(0.399)	(0.570)	(0.474)	(0.453)	(0.413)
Yearly wage: 2.5M-5M Yen	0.900**	-0.123	-0.057	0.059	0.591	-0.022	-0.057	0.013
	(0.449)	(0.372)	(0.352)	(0.323)	(0.460)	(0.382)	(0.365)	(0.333)
Yearly wage: 50M-100M Yen	0.474	-0.173	0.134	-0.525*	0.240	-0.045	0.153	-0.542*
	(0.425)	(0.352)	(0.333)	(0.305)	(0.431)	(0.359)	(0.343)	(0.313)
Tenure: 5 years or shorter	-0.288	0.381	0.500*	-0.145	-0.443	0.481	0.498*	-0.198
	(0.371)	(0.307)	(0.291)	(0.266)	(0.377)	(0.314)	(0.300)	(0.274)
Tenure: 6-10 years	-0.090	0.395	0.640**	0.136	-0.196	0.435	0.627**	0.107
	(0.348)	(0.288)	(0.273)	(0.250)	(0.349)	(0.290)	(0.277)	(0.253)
Tenure: 11-15 years	-0.323	-0.254	0.260	0.284	-0.343	-0.230	0.256	0.272
	(0.334)	(0.276)	(0.262)	(0.240)	(0.332)	(0.276)	(0.264)	(0.241)
Middle manager	-0.195	0.084	-0.056	-0.321**	-0.199	0.051	-0.071	-0.326**
	(0.218)	(0.180)	(0.170)	(0.156)	(0.217)	(0.181)	(0.173)	(0.158)
Number of job changes	-0.001	-0.044	0.035	-0.077	0.000	-0.026	0.043	-0.073
	(0.070)	(0.058)	(0.055)	(0.050)	(0.070)	(0.058)	(0.056)	(0.051)
Firm size: 1-19 workers					0.971***	-0.174	0.046	0.033
					(0.337)	(0.280)	(0.268)	(0.245)
Firm size: 20-99 workers					0.775**	-0.079	0.073	0.235
					(0.337)	(0.280)	(0.268)	(0.244)
Firm size: 100-299 workers					0.842**	0.374	0.374	0.254

Business startup reasons

					(0.350)	(0.291)	(0.278)	(0.254)
Firm size: 300-999 workers					0.580*	-0.123	0.055	-0.159
					(0.350)	(0.291)	(0.278)	(0.254)
Firm age: 27 years or younger					0.047	-0.294	-0.031	0.065
					(0.295)	(0.245)	(0.235)	(0.214)
Firm age: 28-62 years					-0.041	-0.098	-0.024	0.015
					(0.269)	(0.223)	(0.213)	(0.195)
Constant	-1.670	0.100	-1.669*	0.999	-2.896**	0.254	-1.884*	0.671
	(1.214)	(1.004)	(0.952)	(0.872)	(1.281)	(1.065)	(1.018)	(0.929)
R^2	0.07	0.07	0.11	0.14	0.11	0.10	0.12	0.16
F	0.94	0.96	1.47	2.09	1.11	1.02	1.24	1.80
Significance of F	0.55	0.51	0.08	0.00	0.32	0.44	0.20	0.01
Breusch-Pagan test of independence: χ^2			129.00				131.83	
Significance of χ^2			0.00				0.00	
Number of observations			294				294	

* $p < .10$; ** $p < .05$, *** $p < .01$; two-tailed tests.

† Standard errors are in parentheses. All models include dummy variables for industry. .

Table 5 Multivariate multiple regression models of major motives for starting new businesses: middle managers and general employees †

	Model 1				Model 2			
	Middle managers only				General employees only			
	Career problem	Work flexibility	Self fulfillment	Livelihood security	Career problem	Work flexibility	Self fulfillment	Livelihood security
Female	-0.676	0.309	-0.597	-0.349	-0.244	0.242	0.230	-0.094
	(0.794)	(0.700)	(0.640)	(0.559)	(0.291)	(0.225)	(0.227)	(0.207)
Years of education	0.065	-0.055	0.040	-0.062	0.122*	-0.044	0.070	0.070
	(0.095)	(0.084)	(0.077)	(0.067)	(0.072)	(0.056)	(0.056)	(0.052)
Individual's age: 20-29 years old	0.596	-0.107	0.854	-0.646	0.324	0.405	0.464	-0.573
	(1.112)	(0.981)	(0.896)	(0.783)	(0.709)	(0.549)	(0.553)	(0.505)
Individual's age: 30-39 years old	-0.431	-0.611	0.131	-0.397	0.615	0.543	0.001	-0.620
	(0.664)	(0.585)	(0.535)	(0.467)	(0.587)	(0.454)	(0.458)	(0.418)
Individual's age: 40-49 years old	-0.131	-0.426	-0.121	-0.010	0.968	0.915**	0.183	-0.290
	(0.569)	(0.502)	(0.459)	(0.401)	(0.599)	(0.464)	(0.467)	(0.427)
Married	0.387	0.622*	0.690**	-0.330	0.242	-0.008	0.569***	-0.082
	(0.411)	(0.363)	(0.331)	(0.290)	(0.266)	(0.205)	(0.207)	(0.189)
Yearly wage: 2.5M Yen or less	1.003	-2.294	0.965	-1.624	0.851	0.330	0.316	-0.578
	(2.054)	(1.811)	(1.654)	(1.446)	(0.780)	(0.604)	(0.608)	(0.556)
Yearly wage: 2.5M-5M Yen	0.385	-0.584	-0.370	-0.090	0.852	-0.002	0.294	-0.323
	(0.750)	(0.662)	(0.604)	(0.528)	(0.696)	(0.538)	(0.543)	(0.496)
Yearly wage: 50M-100M Yen	0.206	0.226	0.208	-0.394	0.351	-0.472	0.371	-1.059**
	(0.646)	(0.570)	(0.520)	(0.455)	(0.694)	(0.537)	(0.541)	(0.495)
Tenure: 5 years or shorter	-0.760	0.760	0.536	-0.524	-0.307	0.386	0.398	-0.076
	(0.652)	(0.575)	(0.525)	(0.459)	(0.501)	(0.388)	(0.391)	(0.357)
Tenure: 6-10 years	-0.681	0.665	0.945*	-0.319	-0.034	0.514	0.379	0.196
	(0.671)	(0.592)	(0.541)	(0.473)	(0.455)	(0.352)	(0.355)	(0.324)
Tenure: 11-15 years	-0.379	0.064	0.242	0.111	-0.459	-0.415	0.043	0.300
	(0.539)	(0.476)	(0.435)	(0.380)	(0.471)	(0.364)	(0.367)	(0.335)
Number of job changes	0.130	-0.066	0.203*	0.005	-0.077	-0.049	-0.043	-0.120*
	(0.139)	(0.122)	(0.112)	(0.098)	(0.088)	(0.068)	(0.069)	(0.063)
Firm size: 1-19 workers	1.249**	0.187	-0.128	0.149	0.816*	-0.168	0.349	0.399
	(0.630)	(0.556)	(0.508)	(0.444)	(0.461)	(0.357)	(0.359)	(0.328)
Firm size: 20-99 workers	1.301**	0.281	-0.304	0.173	0.497	-0.089	0.412	0.554*
	(0.625)	(0.551)	(0.504)	(0.440)	(0.439)	(0.340)	(0.342)	(0.313)
Firm size: 100-299 workers	0.867	0.263	0.236	0.413	0.760	0.458	0.553	0.501
	(0.599)	(0.528)	(0.483)	(0.422)	(0.483)	(0.374)	(0.377)	(0.344)
Firm size: 300-999 workers	0.929	0.256	0.201	0.431	0.364	-0.217	0.015	-0.214

Business startup reasons

	(0.682)	(0.602)	(0.550)	(0.480)	(0.446)	(0.345)	(0.348)	(0.318)
Firm age: 27 years or younger	-0.149	-0.824*	-0.036	0.380	0.154	-0.036	-0.153	-0.219
	(0.547)	(0.482)	(0.441)	(0.385)	(0.402)	(0.311)	(0.314)	(0.286)
Firm age: 28-62 years	-0.306	-0.609	-0.107	0.040	0.139	0.187	-0.142	-0.122
	(0.484)	(0.426)	(0.390)	(0.340)	(0.356)	(0.275)	(0.277)	(0.253)
Constant	-1.591	1.476	-1.862	1.665	-3.946**	0.010	-2.766**	0.097
	(2.240)	(1.975)	(1.805)	(1.577)	(1.734)	(1.342)	(1.352)	(1.235)
R^2	0.22	0.21	0.29	0.26	0.14	0.21	0.13	0.24
F	0.78	0.70	1.12	0.94	1.01	1.60	0.95	1.98
Significance of F	0.77	0.85	0.34	0.56	0.46	0.04	0.54	0.01
Breusch-Pagan test of independence: χ^2			60.56				84.44	
Significance of χ^2			0.00				0.00	
Number of observations			101				193	

* $p < .10$; ** $p < .05$, *** $p < .01$; two-tailed tests.

† Standard errors are in parentheses. All models include dummy variables for industry.