経済学研究 70－2
北海道大学 2020.12

The Translation of Entrepreneurial Intention into Behavior

Enkhzaya Nergui

1. Introduction

Over the past few years, entrepreneurship scholars have been focusing on the entrepreneurial process of new venture creation. In order to understand how new venture creating process occurs, an understanding of entrepreneurial intentions and entrepreneurial behavior is necessary. This follows from the view that entrepreneurial behavior is intentional and starting point of the action is the formation of intention (Ajzen, 1991; Bird, 1988), thus suggesting that there is a link between entrepreneurial intention and behavior. Moreover, according to Ajzen (1991), intentions are "indications of how hard people are willing to try, how much of an effort they are planning to exert, in order to perform the behavior" (p.181). Therefore, entrepreneurial intention can be seen as readiness to start a business and engaging in entrepreneurial activities.

In previous studies, the vast majority of research has investigated the entrepreneurial intentions and antecedents of intentions, but there are few studies done on the relationship between entrepreneurial intention and behavior (e.g., Bogatyreva *et al*., 2019; Gielnik *et al*., 2014; Gieure *et al*., 2019; Kautonen *et al*., 2013; Neneh, 2019; Van Gelderen *et al*., 2015). Following from the evidence in previous studies, intention models are suited to understand emergence of new venture (Bogatyreva *et al*., 2019; Krueger *et al*., 2000).

Yet, such studies have shown that not all entrepreneurial intentions are translated into the actual behavior of starting a business (Shirokova *et al*., 2016). While many people develop their intention to start their own company, sometimes these intentions are postponed due to changes of personal preferences (Van Gelderen *et al*., 2015). It is indicating intention and behavior gap (Bogatyreva *et al*., 2019; Shirokova *et al*., 2016; Van Gelderen *et al*., 2015).

Moreover, as seeing from the previous studies, entrepreneurial intention-behavior studies mostly involved university students (Bogatyreva *et al*., 2019; Neneh, 2019; Shirokova *et al*., 2016), while actual entrepreneurs were examined the entrepreneurial intention-behavior link in this study. Starting a business may not be a realistic and serious decision for the students even though student sample may be more suitable to measure entrepreneurial intentions to define career choice (Crant, 1996). Therefore, this study contributes to the entrepreneurship literature by examining the relationship between entrepreneurial intention and behavior from the sample of actual entrepreneurs instead of students.

This paper is structured as follows: It begins by presenting conceptual model and hypothesis with theoretical background. Then it moves to description of sample, methodology part, and results. Finally, it ends conclusions and discussions of the findings with theoretical implications, limitations and future

research discussions.

2. Theory and research hypothesis

Earlier entrepreneurship studies mostly focused on the reason to become an entrepreneur or distinguish entrepreneurs from non-entrepreneurs based on personality traits and demographic variables (Antoncic *et al.*, 2015; Brockhaus, 1980; Mueller & Thomas, 2000). However, throughout years, literature has shown the limited explanatory power of predicting entrepreneurial behavior by personality traits or personality characteristics (Herron & Robinson, Jr, 1993; Hollenbeck & Whitener, 1988). Rather than personal characteristics, numerous social psychologists refer that intentions predict actual behavior (Ajzen, 1991; Osorio *et al.*, 2017). Across a wide range of different behaviors, intentions have been identified as the most immediate predictor of actual behavior (Ajzen, 1991). From this perspective, the focus gradually shifted to intention.

Entrepreneurial intention is considered as the first step in the process of entrepreneurship (Gatewood *et al.*, 1995) and commitment of an individual to start a new business (Krueger, 1993). In the framework of Theory of Planned Behavior (TPB) (Ajzen, 1991), intention has three antecedents which are attitude toward behavior, subjective norm, and perceived behavioral control (PBC). Attitude toward behavior refers to a favorable or unfavorable perception toward a behavior, subjective norm indicates the perceived social impression from social group such as family, friends or co-workers, and perceived behavioral control refers an easiness or difficulty to perform a behavior (Ajzen, 1991).

The TPB is derived from social psychology and is one of the mostly used and widely applied frame to predict intentions in various research contexts (Schlaegel & Koenig, 2013). A previous study finds that the three antecedents jointly explain 30-45% of the variation in intentions (Liñán & Chen, 2009a). Moreover, Sheeran (2002) reports that intention explains 28% of the variance in behavior, and meta-analytic review in Armitage and Conner (2001) have shown that TPB accounts for an average 39% of the variance in intention and 27% of the variance in behavior (Armitage & Conner, 2001).

Moreover, TPB has been explaining entrepreneurial intention and behavior empirically and theoretically since introduced by Krueger and Carsrud (1993) to the entrepreneurship literature (Krueger & Carsrud, 1993). According to this theory, intentions are good predictor of actual behavior and supported in the context of entrepreneurial behavior (Van Gelderen *et al.*, 2015). For instance, Kautonen, Gelderen, and Fink (2015) showed that intention and perceived behavioral control (PBC) explain 31% of the variance in entrepreneurial behavior.

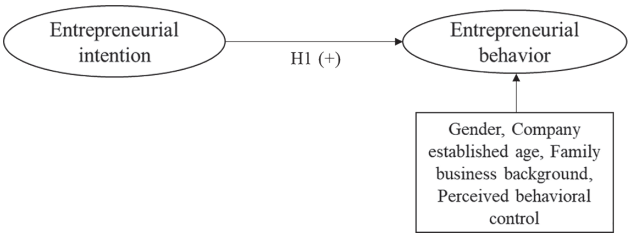

Figure 1. Conceptual model

As such, many entrepreneurship studies adopted this model as the basis for examining the relationship between entrepreneurial intention and behavior (Schlaegel & Koenig, 2013; Van Gelderen *et al*., 2015). Following the underlying the principles of the TPB, Kautonen *et al*. (2013) first tested the intention and behavior relationship in the context of entrepreneurship. They argued that entrepreneurial intention is a significant predictor of entrepreneurial behavior among adults from Finland. Similarly, Kautonen, Van Gelderen, and Fink (2015) further confirmed the positive and significant relationship between entrepreneurial intention and behavior using data from Austria and Finland. Also, Shirokova *et al*. (2016) provided support for a positive association between intention and behavior among 34 countries students using by GUESS data set. Lastly, Neneh (2019), and Meoli *et al*. (2019) showed that the intention significantly predicts entrepreneurial behavior among students from Africa etand Italy respectively.

On the other hand, there are studies of entrepreneurial intention which conducted in Japan (Honjo, 2015; Nakayama, 2016). Yet, there is still a lack of empirical evidence of the relationship between entrepreneurial intention and behavior on Japanese entrepreneurs. Also, previous studies noted that intention studies need to be extended by behavior to see the whole process of how entrepreneurial intention translates into behavior (e.g. Kautonen, Van Gelderen, & Fink, 2015). Besides, research on entrepreneurial intention and behavior mainly comes from the U.S. and Europe, and the result of such previous studies cannot be explained and applied to the situations in different cultures.

Moreover, according to the Global Entrepreneurship Monitor (GEM), the Japanese entrepreneurial activity ratio in 2010 was 3.3% which was placed at the 57th among 59 countries. Also, in the World Bank data of yearly averages for entry rates of entrepreneurship from 2000 to 2007, Japan is at the lowest of the 34 member nations (Nakayama, 2016).

Thus, for addressing the issues, the data was collected from Japanese entrepreneurs in order to obtain a deeper understanding of the relationship between entrepreneurial intention and behavior in Japan, at the same time this analysis contributes to the literature of intention-behavior in entrepreneurship context while there is a little evidence of focusing on the Japanese entrepreneurs. Moreover, empirical evidence from Japanese entrepreneurs would demonstrate the reasons that hamper entrepreneurship in Japan from the viewpoint of intention which is considered as the starting point of new venture creation.

Consequently, based on the available empirical evidence, this study hypothesizes that:

Hypothesis 1. Entrepreneurial intention is positively related to entrepreneurial behavior.

3. Methods

Research design, measures, sample, demographic profile and preliminary data check were described in this section.

3.1. Research design

In this study, the survey was administrated to entrepreneurs in Japan in order to determine the impact of entrepreneurial intention on the scope of start-up activity. Entrepreneurs are defined as owning all or

part of a business they helped manage, and had paid wages or made profits (Koellinger *et al*., 2007). The survey questionnaire included the questions related to demographic profile, control variables, entrepreneurial intention, and start-up activities.

The questionnaires which had been developed for English speakers was adopted from previous studies (Liñán & Chen, 2009b; Ngek Neneh, 2019; Shirokova *et al*., 2016). For collecting data from Japanese entrepreneurs, question items in the questionnaire were translated into Japanese and carefully reviewed by a native Japanese speaker to avoid distortion of the meaning. The translated questionnaire was distributed to the respondents.

Building upon the Theory of Planned Behavior (Ajzen, 1991), the survey was aimed at gaining an understanding of intention and start-up activity.

3.2. Measures

3.2.1. Dependent variable

New venture creation is "the process that takes place between the intention to start a business and making the first sales" (Gatewood *et al*., 1995, p.380) and "the more time and efforts one devotes toward accomplishing a task, the more likely it is that the achievement of this task will occur" (Gatewood *et al*., 1995, p.373). Therefore, how many activities are done to start a new business could determine how close an entrepreneur comes to start their business.

Scholars agree that any organization's emergence process is consists of multiple start-up activities (Gatewood *et al*., 1995). The dependent variable in this study represents the entrepreneurial behavior, which consists of start-up activities that an entrepreneur has already carried out. Based on the approaches used in previous studies (e.g., see Neneh, 2019; Shirokova *et al*., 2016) the list of 11 start-up activities was adopted from Panel Study of Entrepreneurial Dynamics (PSED) and includes following items: (1) I discussed product or business idea with potential customers, (2) I collected information about markets or competitors, (3) I have written a business plan, (4) I started product/service development, (5) I started marketing or promotion efforts, (6) I purchased material, equipment or machinery for the business, (7) I attempted to obtain external funding, (8) I developed financial projections, such as income or cash flow statements or break-even analyses, (9) I applied for a patent, copyright or service, (10) I registered the company, (11) I sold products or service. Start-up activities were operationalized with 7-point Likert scale ranging from 1 "nothing done", and 7 "entirely done". As similar with previous studies, a summative index of the number of start-up activities that has done divided by the overall 11 activities on the list, was used (Ngek Neneh, 2019; Shirokova *et al*., 2016). The index ranges from 1 (nothing done), to 7 (entirely done).

3.2.2. Independent variable

Entrepreneurial intentions were measured 6 items from prior studies (Neneh, 2019; Shirokova *et al*., 2016; Van Gelderen *et al*., 2015). The questionnaire adopted from Linan and Chen (2009) and the items were operationalized on a 7-point scale by 1 "strongly disagree" to 7 "strongly agree". The respondents were offered to assess the following statements: "I was ready to do anything to be an entrepreneur", "My professional goal was to become an entrepreneur", "I made every effort to start and run my own firm", "I was determined to create a firm in the future", "I had very seriously thought of

starting firm", "I had the strong intention to start a firm someday". Multiple-item variables are calculated as an average score on all the items.

3.2.3. Control Variables

The first control variable is gender. Gender is one of the widely associated with entrepreneurial behavior (Shinnar *et al*., 2018). Generally, women are more likely to have lower entrepreneurial propensity compared to men (Kautonen, Van Gelderen, *et al*., 2015; Shinnar *et al*., 2018). Similar to prior studies (Gielnik *et al*., 2014; Kautonen, Hatak, Kibler, & Wainwright, 2015; Kautonen *et al*., 2013; Neneh, 2019; Shirokova *et al*., 2016) gender was measured as dummy variables (0 – female, 1 – male).

The second control variable is age of starting the business. According to Levesque and Minniti (2006), older individuals are less likely to start a new business than younger individuals (Lévesque & Minniti, 2006). Moreover, prior studies showed that age influences new venture creation (Davidsson & Honig, 2003; Lévesque & Minniti, 2006; Neneh, 2019). In this study, respondents answered the question: "How old you were when you established your company?"

The third variable is entrepreneurial family background which provides individuals with useful information, contextual knowledge and support that can be helpful for translating intention into actions (Dimov, 2010; Edelman, Manolova *et al*., 2016). Similar to previous studies (Bogatyreva *et al*., 2019; Neneh, 2019), family business background was measured as dummy variables which were coded as "0" – No, "1" – Yes for the following question: does any of your family members run a business? (1) Parents, (2) Brothers and Sisters.

Lastly, according to Ajzen (1991), except the intention, perceived behavioral control has direct influence on entrepreneurial behavior among the TPB elements. Thus, same as previous studies, perceived behavioral control is included in this study as a control variable (Bogatyreva *et al*., 2019; Neneh, 2019; Shirokova *et al*., 2016; Weiss *et al*., 2019). PBC is measured by 6 items with a 7-point Likert scale adopted from Linan and Chen (2009) demonstrating the alpha of 0.875. These items were included: (1) To start a firm and keep it working would be easy for me, (2) I am prepared to start a viable firm, (3) I can control the creation process of a new firm, (4) I know the necessary practical details to start a firm, (5) I know how to develop an entrepreneurial project, (6) If I tried to start a firm, I would have a high probability of succeeding.

3.3. Sample and Demographic profile

The questionnaire was distributed by a research company in Japan among 1195 entrepreneurs and 693 responded back (response rate is 58.0 %).The target population of this study involved the active entrepreneurs (as of March of 2019) who established their companies within the last 10 years from March of 2019 when the study was conducted. From the sample of 693 respondents, 532 qualified for further analysis. Upon further detailed review, 92 respondents were excluded because of the inappropriate answers (e.g., gave same answers on all questions). Moreover, this study focused on the entrepreneurs who established and ran their first company within 10 years. Thus, 69 respondents who established two or more companies by themselves were omitted from the sample.

Considering the low level of entrepreneurship in Japan and the sample size of the study, until 10

years old companies were chosen, even though prior studies used the samples of 6 or 7 years old companies (Brush & Pieter, 1992; Chandler & Hanks, 1995). When answering the questions, the respondents recalled the period before start-up when developing the entrepreneurial intentions to decide becoming entrepreneur and period when taking actions to translate from intention into behavior. The other studies also indicate that recall is fairly proper to start-up process, activities, and other key events which were considered as important (Brush & Pieter, 1992; Chandler & Hanks, 1995).

Table 1 Demographics of Respondents (N = 532)

Category	N	%	Category	N	%
Gender			*Industry Type*		
Female	61	11.5	advertising/design/marketing	40	7.5
Male	471	88.5	commercial	84	15.8
Age			education and training	30	5.6
21-30	25	4.7	financial services	65	12.2
31-40	105	19.7	other services (transportation, etc.)	108	20.3
41-50	153	28.8	design/engineering	28	5.3
51-60	189	35.5	IT communication	58	10.9
61 over	60	11.3	other fields	161	30.3
Education					
middle school	17	3.2			
high school	118	22.2			
vocational school	62	11.7			
college	11	2.1			
university	282	53.0			
graduate school (master)	22	4.1			
graduate school (doctor)	11	2.1			
other	9	1.7			

Among the respondents, 11.5 % were female, and 88.5% percent were male. The majority of respondents distributed between the ages of 31-60 years. The 4.7% of the total respondents were 21-30 years and 11.3 % of 61 years or older. Considering education level, 53% of respondents had earned undergraduate degrees, 22.2% had graduated high school and 6.2% had achieved a postgraduate degree (master and doctoral). The rest of respondents graduated middle school, vocational school and other schools respectively 3.2%, 11.7%, and 1.7%. The respondents were active in advertising/design/marketing (7.5%), commercial (15.8%), education and training (5.6%), financial services (12.2%), other services (20.3%), design/engineering (5.3%), IT communication (10.9%) and other fields (30.3%).

3.4. Descriptive Statistics

Descriptive statistics for entrepreneurial intention and start-up behavior is presented in Table 2. The mean scores of entrepreneurial intention ranged from 3.64 (item 2) – *My professional goal was to become an entrepreneur* to 4.72 (item 5) – *I had very seriously thought of starting firm*. Seeing from the lowest and the highest mean scores, from the very beginning some respondent did not necessarily intend to be an entrepreneur. They graduated from many ranges of university with different majors other than business related field. On the other hand, even if they did not have professional goal for becoming entrepreneurs, as they answered they developed serious thoughts of becoming entrepreneurs.

Table 2 Descriptive Statistics

	Min (no)	Max (yes)	Mean	S.D.	CA
Start-up activity	1	7	3.99	1.24	-
Intention	1	7	4.39	1.45	0.899
Age when you established the company	15	68	44.35	10.16	-
Family Business Background	0 (358)	1 (174)	-	-	-
Perceived behavioral control	1	7	3.97	1.24	0.875

Note. N = 532

The mean scores of start-up activities ranged from 2.56 (item 9) – *I applied for a patent* to 5.44 (item 10) – *I registered the company*. It indicates that respondents registered their company very firstly compared

to other start-up activities in turning intentions to actions.

3.5. Measurement validation

Firstly, scale was subjected to a confirmatory factor analysis (CFA). The result shows that all items loaded on the proposed factor at the 0.001 significance level. Then several quality criteria were used to validate the data of this study. Cronbach alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE) were measured using SPSS 20 and AMOS sofwares.

Table 3 Quality Criteria for main construct

Construct	CA	CR	AVE
Entrepreneurial intention	0.896	0.897	0.596

Note. CA = Cronbach's alpha, CR = Composite reliability, AVE = Average variance extracted

The data in Table 3 shows that the main construct (intention) of this study met the quality criteria of Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE). Both Alpha value and CR are indicating 0.896 and 0.897 respectively which above the required acceptable threshold 0.7 (Henseler *et al*., 2009). This shows that internal consistency reliability of intention constructs in this study is viewed as acceptable. Similarly, AVE value confirms the convergent validity of the constructs by showing the result of 0.596 which is above the acceptable threshold of 0.5 (Henseler *et al*., 2009).

Moreover, discriminant validity was checked according to the Fornell and Larcker (1981) criterion for convergent validity of construct. According to the Fornell and Larcker (1981) criterion, discriminant validity is accepted when the square roots of the AVE is greater than the inter-construct correlations (Fornell & Larcker, 1981). In this study, as can be seen in Table 4, measures have adequate discriminant validity that showing the square root of the AVE 0.773 (value in bold) for main construct of intention is greater than inter-construct correlations. CMB was checked by Harman single factor test. All constructs from the same respondents by self-report measures, the results could be distorted by CMB (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). Common method bias (CMB) is resulting from "variance that is attributable to the measurement method rather than to the constructs the measurement represent" (Podsakoff *et al*., 2003, p.879). According to the Harman test, only one factor emerged which is 31.74 of variance less than the threshold criteria of 50 percent (Rodríguez-Ardura & Meseguer-Artola, 2020). Therefore, CMB is unlikely to bias the results of the current study.

Table 4 Correlations and discriminant validity

	1	2	3	4	5	6
1. Start-up activity	-					
2. Intention	0.480**	**.773**				
3. Gender	0.010	0.028	-			
4. Age when you established the company	-0.037	-0.107*	0.246**	-		
5. Family Business Background	0.067	-0.009	-0.063	-0.141**	-	
6. Perceived behavioral control	0.372**	0.470**	-0.005	0.066	0.009	-

Note. N = 532 ***p < 0.001, **p < 0.01, *p < 0.05. All reported significance levels are two-tailed. Diagonal value in bold represent the square root of the AVE value. Start-up activity is measured as the start-up index ranging from 1 to 7.

4. Results

Regression analysis was applied to predict entrepreneurial behavior based on entrepreneurial intention. The four control variables were introduced into the model.

Table 5 Regression analysis on start-up activities

Variables	b	t-value
Main effect		
Entrepreneurial intention	0.393	9.114***
Control variables		
Gender	0.003	0.085
Age when you established the company	0.002	0.059
Family business background	0.069	1.834
Perceived behavioral control	0.186	4.334***

Note. N = 532 ***p < 0.001, **p < 0.01, *p < 0.05.

From Table 5, the control for perceived behavioral control (b=0.186, p<0.001) was positive and significantly associated with entrepreneurial behavior in this model.

Hypothesis 1, positive main impact of entrepreneurial intention on entrepreneurial behavior was tested in a regression analysis. As shown in Table 5, a significant regression equation was found (F (5,526) =42.737, p<0.001) with an adjusted R^2 of 0.255. The model suggests that a one standard deviation increase in entrepreneurial intention increases start-up behavior index by 0.393 standard deviations. The main effect of entrepreneurial intentions predicts 25.5% of the variance in the entrepreneurial behavior (R^2=0.255) and significantly positively associated with entrepreneurial behavior (b=0.393 and p<0.001). Thus, hypothesis 1 was supported.

5. Conclusions and Discussions

This study is rooted in the view that entrepreneurial behavior is explained by the Theory of Planned Behavior and starting point is the development of entrepreneurial intention. Moreover, entrepreneurial intention is increasingly considered as a key predictor of entrepreneurial behavior. The finding which confirmed that there is significant positive association between entrepreneurial intention and entrepreneurial behavior, is consistent with relevant prior studies (Kautonen, Van Gelderen, & Fink, 2015; Neneh, 2019; Shinnar *et al*., 2018; Shirokova *et al*., 2016).

In addition, the result of entrepreneurial intention explains 25.5% of variance in entrepreneurial behavior is higher than the previous studies which used sample from students. For instance, Shirokova *et al*. (2016) showed the entrepreneurial intentions explain 9.9% of variance in start-up activities of students. As such, individuals are more likely to engage in entrepreneurial activities after getting work experience from jobs rather than just after graduating from universities (Lee *et al*., 2011).

However, the result is still indicating weak association between entrepreneurial intention and behavior. In particular, only formation of entrepreneurial intention is not sufficient for individuals to take start-up activities (e.g., Van Gelderen *et al*., 2015). Formation of entrepreneurial intention has been considered as volitional (Kautonen, Van Gelderen, & Fink, 2015), whereas the translation from intention into behavior is required non-volitional factors. Thus, as mentioned in previous studies (Neneh, 2019; Shirokova *et al*., 2016), investigating entrepreneurial intention-behavior gap and factors which influence this relationship is suggested.

As for the control variables, this study controlled for the four variables that could affect entrepreneurial behavior. The findings of this study showed that perceived behavioral control has a positive and significant effect on scope of start-up activities. This result is consistent with previous studies as Weiss *et al*. (2019), Kautonen, Hatak, Kibler *et al*. (2015) found that perceived behavioral control had a positive and significant association with entrepreneurial behavior. Moreover, Kautonen, Van Gelderen, and Fink (2015) suggested that intention and PBC explain 31% of the variance in

behavior.

However, the rest of control variables, age when established the company, gender, and family business background, were not significant. As for the age when established the company, the result is contrary to the prior studies which age is significantly correlated with entrepreneurial behavior. Shirokova *et al.* (2016) argued that age has significant impact on entrepreneurial intentions and behavior. Moreover, Van Gelderen *et al.* (2015) suggested that older people are more likely to engage in entrepreneurial behavior with less procrastination. On the other hand, this study confirms the concept of ages of starting new businesses being diversified (Hsu *et al.*, 2007) and has similar finding with Neneh (2019) that age has no positive association with entrepreneurial behavior.

For gender, empirical studies show that women are less likely to become entrepreneurs (Shinnar *et al.*, 2018; Shirokova *et al.*, 2016). In order to become entrepreneurs, women and men face different challenges, social expectations and receive different level of support (Shinnar *et al.*, 2018). Therefore, compared to men, women tend to have a lower entrepreneurial intentions. Previous studies of Shinnar *et al.* (2018), and Shirokova *et al.* (2016) suggested that gender has positive and significant impact on entrepreneurial intention and behavior link while Kautonen, Van Gelderen, and Fink (2015), and Neneh (2019) argued that gender was not significant, which is congruent with the result of this study.

Lastly, the findings of this study indicated that family business background is not significant to entrepreneurial behavior. However the result is not consistent with previous studies which indicted that ones who have parents or siblings with business experience, will have greater entrepreneurial intention to start their own businesses (Edelman *et al.*, 2016; Nakayama, 2016; Shirokova *et al.*, 2016). From these prior studies, student samples were involved. Thus, the result of students who intend to start their own businesses just after graduation might differ from individuals who already graduated. For instance, young entrepreneurs have less experience, few social relations, and a lack of financial capital compared to experienced entrepreneurs (Davidsson & Honig, 2003; Dimov, 2010). Specifically, university students are often related to their parents' household and partially or fully depend on their household income (Edelman *et al.*, 2016). Therefore, family business background or family support is more crucial for students who intend to become an entrepreneur.

5.1. Theoretical implications

This study makes contributions to entrepreneurial intention-behavior literature by providing more insightful understanding of the process that entrepreneurial intention turns into entrepreneurial behavior based on the sample of actual entrepreneurs.

To address the limitation of student sample of previous studies, the present study involved the entrepreneurs who already established their company. Using a sample of actual entrepreneurs provides more nuanced understanding for evaluation of the factors that can influence the relationship between entrepreneurial intention and behavior other than the intention. In addition, to better understand the entrepreneurial intention-behavior relationship, potential moderator variables should be taken into account.

5.2. Practical implications

From an empirical perspective, the findings of this study have implications for entrepreneurship educators, policy makers, and aspiring entrepreneurs. First, this study corroborates the view that entrepreneurial intentions are starting point of entrepreneurial process (Liñán & Chen, 2009a). For entrepreneurship educators and policy makers, fostering the entrepreneurial intentions is a foundation of entrepreneurial ecosystems' development.

Moreover, entrepreneurship training programs or mentors should encourage developing and not postponing the entrepreneurial intentions toward actual start-up activities. In addition, for aspiring entrepreneurs especially who have unfavorable profile characteristics, this study shows that other non-volitional factors such as support factors are necessary for translating entrepreneurial intentions into actual behavior.

5.3. Limitations and future research avenues

This study has some of limitations that open promising avenues for future studies.

First, generalization of the findings might not be applicable since the study sample is gathered from only Japanese entrepreneurs. Thus, future studies can investigate the entrepreneurial intention and behavior with actual entrepreneurs' sample in the other national contexts.

Secondly, the present study used a single method which was self-report survey. For reducing bias and capturing non-cognitive variables, especially for investigating entrepreneurial behavior future studies should consider other methods such as observations or interview, etc.

Lastly, this study did not focus on the antecedents of intention. To gain understanding of the whole process of entrepreneurship, formation of entrepreneurial intention is important as well as intention-behavior link (Ajzen, 1991). Thus, future studies should examine the whole process for analyzing emergence of entrepreneurial intention and their translation into actions.

Acknowledgements : I would like to acknowledge the editor and the anonymous reviewer for his/her significant suggestions and guidance on the improvement of this paper. I also would like to thank Otsuka Toshimi Scholarship Foundation for providing generous support to my research activities.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Antoncic, B., Bratkovic Kregar, T., Singh, G., & Denoble, A. F. (2015). The big five personality-entrepreneurship relationship: Evidence from Slovenia. *Journal of Small Business Management*, *53*(3), 819–841. https://doi.org/10.1111/jsbm.12089

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, *40*, 471–499. Retrieved from https://pdfs.semanticscholar.org/ab83/87ae29317c651a129efc7a2297bc5f348a95.pdf

Bird, B. (1988). Implementing entrepreneurial ideas : The case for intention. *Academy of Management Review*, *13* (3), 442–453.

Bogatyreva, K., Edelman, L. F., Manolova, T. S., Osiyevskyy, O., & Shirokova, G. (2019). When do entrepreneurial intentions lead to actions? The role of national culture. *Journal of Business Research*, *96* (November 2018), 309–321. https://doi.org/10.1016/j.jbusres.2018.11.034

Brockhaus, R. H. (1980). Psychological and environmental factors which distinguish the successful from the unsuccessful entrepreneur: A longitudinal study. *Academy of Management Proceedings*, *1980* (1), 368–372. https://doi.org/10.5465/ambpp.1980.4977943

Brush, G. C., & Pieter, V. A. (1992). A comparison of methods and sources for obtaining estimates of new venture performance. *Journal of Business*, *7*, 157–170.

Chandler, G. N., & Hanks, S. H. (1995). An examination of the substitutability of founders human and financial capital in emerging business ventures. *Journal of Business Venturing*, *9026* (97), 353–369.

Crant, M. (1996). The proactive personality scale as a predictor of entrepreneurial intentions. *Journal of Small Business Management*, *34* (3), 42–49.

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, *18* (3), 301–331. https://doi.org/10.1016/S0883-9026(02)00097-6

Dimov, D. (2010). Nascent entrepreneurs and venture emergence : Opportunity confidence, human capital , and early planning. *Journal of Management Studies*, (September). https://doi.org/10.1111/j.1467-6486.2009.00874.x

Edelman, L. F., Manolova, T., Shirokova, G., & Tsukanova, T. (2016). The impact of family support on young entrepreneurs' start-up activities. *Journal of Business Venturing*, *31* (4), 428–448. https://doi.org/10.1016/J.JBUSVENT.2016.04.003

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18* (1), 39. https://doi.org/10.2307/3151312

Gatewood, E. J., Shaver, K. G., & Gartner, W. B. (1995). A longitudinal study of cognitive factors influencing start-up behaviors and success at venture creation. *Journal of Business Venturing*, *10*, 371–391. Retrieved from https://ac-els-cdn-com.ezoris.lib.hokudai.ac.jp/0883902695000357/1-s2.0-0883902695000357-main.pdf?_tid=560fa6a1-46d0-4d15-b8d4-a3a3983f9048&acdnat=1553048319_17a4c12156eb9abe1a84b9e912c629c5

Gielnik, M. M., Barabas, S., Frese, M., Namatovu-Dawa, R., Scholz, F. A., Metzger, J. R., & Walter, T. (2014). A temporal analysis of how entrepreneurial goal intentions, positive fantasies, and action planning affect starting a new venture and when the effects wear off. *Journal of Business Venturing*, *29* (6), 755–772. https://doi.org/10.1016/j.jbusvent.2013.09.002

Gieure, C., Del Mar Benavides-Espinosa, M., & Roig-Dobón, S. (2020). The entrepreneurial process: The link between intentions and behavior. *Journal of Business Research*, *112*, 541–548. https://doi.org/10.1016/j.jbusres.2019.11.088

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, *20*, 277–319. https://doi.org/10.1108/S1474-7979(2009)0000020014

Herron, L., & Robinson, Jr, R. B. (1993). A structural model of the effects of entrepreneurial characteristics on venture performance. *Journal of Business Venturing*, *8*, 281–294.

Hollenbeck, J. R., & Whitener, E. M. (1988). Reclaiming personality traits for personnel selection: Self-esteem as an illustrative case. *Journal of Management*, *14* (1), 81–91. https://doi.org/10.1177/014920638801400108

Honjo, Y. (2015). Why are entrepreneurship levels so low in Japan? *Japan and the World Economy*, *36*, 88–101. https://doi.org/10.1016/j.japwor.2015.08.002

Hsu, D. H., Roberts, E. B., & Eesley, C. E. (2007). Entrepreneurs from technology-based universities: Evidence from MIT. *Research Policy*, *36* (5), 768–788. https://doi.org/10.1016/j.respol.2007.03.001

Kautonen, T., Hatak, I., Kibler, E., & Wainwright, T. (2015). Emergence of entrepreneurial behaviour: The role of age-

based self-image. *Journal of Economic Psychology*, *50*, 41–51. https://doi.org/10.1016/j.joep.2015.07.004

Kautonen, T., Van Gelderen, M., & Fink, M. (2015). Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrepreneurship: Theory and Practice*, *39* (3), 655–674. https://doi.org/10.1111/etap.12056

Kautonen, T., Van Gelderen, M., & Tornikoski, E. T. (2013). Predicting entrepreneurial behavior: A test of the theory of planned behavior. *Applied Economics*, *45* (October 2011), 697–707.

Koellinger, P., Minniti, M., & Schade, C. (2007). 'I think I can, I think I can': Overconfidence and entrepreneurial behavior. *Journal of Economic Psychology*, *28*, 502–527. https://doi.org/10.1016/j.joep.2006.11.002

Krueger, N. F. (1993). The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship Theory and Practice*, *18* (1), 5–21. https://doi.org/10.1177/104225879301800101

Krueger, N. F., & Carsrud, A. L. (1993). Entrepreneurial intentions: Applying the theory of planned behaviour. *Entrepreneurship and Regional Development*, *5* (4), 315–330. https://doi.org/10.1080/08985629300000020

Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, *15* (5–6), 411–432. https://doi.org/10.1016/S0883-9026(98)00033-0

Lee, L., Wong, P. K., Der Foo, M., & Leung, A. (2011). Entrepreneurial intentions: The influence of organizational and individual factors. *Journal of Business Venturing*, *26*, 124–136. https://doi.org/10.1016/j.jbusvent.2009.04.003

Lévesque, M., & Minniti, M. (2006). The effect of aging on entrepreneurial behavior. *Journal of Business Venturing*, *21*, 177–194. https://doi.org/10.1016/j.jbusvent.2005.04.003

Liñán, F., & Chen, Y.-W. (2009a). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, *33* (3), 593–617. Retrieved from http://institucional.us.es/vie/documentos/resultados/LinanChen2009.pdf

Liñán, F., & Chen, Y. (2009b). Application of a Specific Instrument to Measure Entrepreneurial Intentions. *Entrepreneurship Theory and Practice*, (May), 593–617. https://doi.org/10.1111/j.1540-6520.2009.00318.x

Mueller, S. L., & Thomas, A. S. (2000). Potential: A nine country study of locus of control and innovativeness. *Journal of Business Venturing*, *16*, 51–75.

Nakayama, T. (2016). Entrepreneurial intention in Japan: An empirical study on Japanese university students. *International Journal of Business and General Management*, *5* (3), 81–96.

Ngek Neneh, B. (2019). From entrepreneurial intentions to behavior: The role of anticipated regret and proactive personality. *Journal of Vocational Behavior*, *112*, 311–324. https://doi.org/10.1016/j.jvb.2019.04.005

Osorio, A. E., Settles, A., & Shen, T. (2017). Does family support matter? The influence of support factors on entrepreneurial attitudes and intentions of college students. *Academy of Entrepreneurship Journal*, *23* (1), 24–43. https://doi.org/10.5465/ambpp.2017.10901abstract

Podsakoff, P. M., Mackenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research : A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88* (5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Rodríguez-Ardura, I., & Meseguer-Artola, A. (2020). Editorial: How to prevent, detect and control common method variance in electronic commerce research. *Journal of Theoretical and Applied Electronic Commerce Research*, Vol. 15, pp. 1–5. https://doi.org/10.4067/S0718-18762020000200101

Schlaegel, C., & Koenig, M. (2013). Determinants of entrepreneurial intent: A meta-analytic test and integration of competing models. *Entrepreneurship Theory and Practice*, *38* (2), 291–332. https://doi.org/10.1111/etap.12087

Shinnar, R. S., Hsu, D. K., Powell, B. C., & Zhou, H. (2018). Entrepreneurial intentions and start-ups: Are women or men more likely to enact their intentions? *International Small Business Journal: Researching Entrepreneurship*, *36* (1), 60–80. https://doi.org/10.1177/0266242617704277

Shirokova, G., Osiyevskyy, O., & Bogatyreva, K. (2016). Exploring the intention–behavior link in student

entrepreneurship: Moderating effects of individual and environmental characteristics. *European Management Journal*, *34* (4), 386–399. https://doi.org/10.1016/j.emj.2015.12.007

Van Gelderen, M., Kautonen, T., & Fink, M. (2015). From entrepreneurial intentions to actions: Self-control and action-related doubt, fear, and aversion. *Journal of Business Venturing*, *30* (5), 655–673. https://doi.org/10.1016/j.jbusvent.2015.01.003

Weiss, J., Anisimova, T., & Shirokova, G. (2019). The translation of entrepreneurial intention into start-up behaviour: The moderating role of regional social capital. *International Small Business Journal: Researching Entrepreneurship*, *37* (5), 473–501. https://doi.org/10.1177/0266242619831170