The South East Asian Journal of Management

Volume 4
Number 2 *October (2010)*

Article 4

10-30-2010

Underlying Factors of Entrepreneurial Intentions among Asian Students

Nurul Indarti
University of Gadjah Mada, Indonesia

Rokhima Rostiani
Tohoku University, Japan, rokhima@gmail.com

Tur Nastiti
National Central University, Taiwan

THE SOUTH EAST ASIAN JOURNAL
OF MANAGEMENT

Underlying Factors of Entrepreneurial Intentions among Asian Students

Nurul Indarti*, Rokhima Rostiani** and Tur Nastiti***

A survey among 650 undergraduate students in Asian countries, including Indonesia, Japan, South Korea, Taiwan, and Thailand, showed that student's entrepreneurial intentions and the determining factors varied from country to country. Generally, self-efficacy, environmental factors, age, and gender were found to have significant impact on entrepreneurial intentions among Asian students. However, the model could only explain 25.5% total variance of entrepreneurial intentions. It is expected that results of this research can give insights for government and universities to formulate policies and programs to cultivate entrepreneurial spirit among students.

Keywords: *entrepreneurial intentions, need for achievement, self-efficacy, environmental factors, demographic factors*

Introduction

Nowadays, entrepreneurship is considered as one of the future drivers for Asian economy. Although the majority of Asia's economies are developing ones, the region boasts 90 of the world's 691 billionaires GDP (Faustino, 2005). Yet, despite their rising incomes and rapid economic growth, Asian countries still face widespread and pervasive poverty. This picture indicates the importance of entrepreneurial skills in this region. Given this, educational or training programs particularly for young people in order to stimulate knowledge awareness/acquisition on entrepreneurship and to start up a business are necessary.

Many studies have been conducted to explore and investigate entrepreneurial intentions and behaviour using various entrepreneurial indicators, such as environment and personality indicators (Mazzarol et al., 1999); psychological characteristics e.g. need for achievement (Green et al., 1996; Sengupta and Debnath, 1994). Another study by Misra and Kumar (2000) proposed a model to explain entrepreneurial behavior that incorporated several factors, such as entrepreneurial intentions, entrepreneurial environment, and demographic, psychological and situational factors. Moreover, Morrison (2000) pointed out that there was relationship between entrepreneurship and culture specificity.

*Nurul Indarti, University of Gadjah Mada, Indonesia
** Rokhima Rostiani, Tohoku University, Japan, Email:rokhima@gmail.com
*** Tur Nastiti, National Central University, Taiwan

Furthermore, previous studies found that entrepreneurial intentions among students are a source of creating new business (Gorman et al., 1997; Kourilsky and Walstad, 1998). Their attitudes, behaviours, and knowledge on entrepreneurship tend to stimulate their intentions and willingness to start a new venture in the future. Entrepreneurial intention is defined as a process of information-searching which can be used to achieve a new venture (Katz and Gartner, 1988). People with intention to start a new venture are more ready and have better progress in running a new business rather than those without. According to Krueger and Carsrud (1993), entrepreneurial intention is recognized as the best predictor for entrepreneurial behavior. Therefore, entrepreneurial intention can be used as a basic approach to understand who want to be an entrepreneur (Choo and Wong, 2006).

This study aimed to examine what factors determined the students' entrepreneurial intentions in Asia. The Asia Development Bank (2009) had explored various indicators for Asia and Pacific's development; and found that the dynamics of entrepreneurship is dominant for SMEs development in these countries. The study focused on personality and environmental factors. Personality factors include need for achievement (i.e. McClelland, 1961) and self-efficacy (Gilles and Rea, 1999), while environmental factors include factors such as social networks, capital and information access (Mazzarol et al., 1999). Similar studies have been conducted to investigate students' entrepreneurial intentions in Norway (Indarti, 2002), in Indonesia (Kristiansen and Indarti, 2004), in Japan (Indarti and Rostiani, 2008), and in Malaysia (Ismail et al., 2009). This current study was an extension of the initial study by Indarti (2002) by including additional Asian countries to compare, i.e. South Korea, Thailand and Taiwan.

The output of the study is expected to participate in the debate, especially with respect to entrepreneurial intentions predictors from different countries in Asia. Furthermore, academic and government in particular may take advantage of the results of this study by taking them into consideration when developing programs to promote entrepreneurship among students. If it is possible, the programs are country-specific. Then, it is expected that fresh graduates will not only be ready to work at companies but they are also prepared to be self-employed, or they are able to apply entrepreneurial principles when working within a company.

As discussed previously, this study was mainly intended to investigate what factors (i.e. personality factors, environmental factors, and demographic factors) determined entrepreneurial intentions among Asian students. The paper is structured as follows. First, we discuss literature reviews on entrepreneurship and entrepreneurial intentions which include empirical findings and hypotheses. Research methodology is explained in the next section. Last section includes discussion on research findings, conclusions, limitations, and future research directions.

Literature Review

Entrepreneurship has been growing recently. Bird and Jellinek (1988) defined entrepreneurship as the intentional creation or transformation of an organization for the purpose of creating or adding value through organization of resources. In this sense, intention is considered to be an important part to distinguish entrepreneur and non-entrepreneur. Furthermore, Bird et al. (1988) stated that entrepreneurs distinguish themselves from others by intentionally linking and organizing their own and others' resources to build a firm, which adds

value. Therefore, different intention will be possessed by those who want to be an entrepreneur than those who do not.

Intention has already become a best predictor of entrepreneurship (Krueger and Carsrud, 1993). According to Bird et. al. (1988), intention is defined as a state of mind, directing attention, experience, and action toward a specific object (goal) or pathway to its achievement. In the context of entrepreneurship, entrepreneurial intention is defined as a process of information-searching which can be used to achieve a new venture (Katz and Gartner, 1988). Entrepreneurship is viewed as an individual, not as a team. People with clear intention towards specific aims, will likely to have better readiness to face unexpected and uncertainties than those who do not have such intentions. Moreover, Krueger et al. (2000) emphasized the necessity of having better understanding on the cause of intentions in order to get the best predictor of intention itself.

Differences in entrepreneurial activities among countries can be explained by cultural and economic factors (Reynolds et al., 1994), for example financial support, infrastructure, policy, and capital. Financial support and education are highly associated with the level of entrepreneurial activity (Low, 2005). Mueller (2004) found that some cultures and societies are more conducive to pursue entrepreneurial activity than others. As results, there are various results in national and regional differences in new venture creation rates. For example, according to GEM (2002), while less than 3% of adults were involved in entrepreneurial activities in Japan, Russia, and in Belgium in 2002, more than 18% were involved in India and Thailand.

The current research mainly focused on examining predictors of entrepreneurial intention from three aspects: 1) personality, which includes need for achievement, locus of control and self-efficacy; 2) environmental factors, which include access to capital, information, and social network; and 3) demographic factors, which include gender, age, education, and working experience in the context of Asia. In the following sections, each factor will be discussed in detail.

A. Personality factors

In this study, we focused on two main factors related to personality as the core predictors of entrepreneurial intentions: need for achievement (e.g. McCLelland, 1976; Chattopadhayay and Ghosh, 2008) and self-efficacy (e.g. Bandura, 1997; Boyd and Vozikis, 1994). Each of personality factors will be explained in the following sub-sections.

1. Need for achievement

McClelland (1976) introduced the concept of need for achievement (N-Ach) as one of psychological motivations. N-Ach can be defined as a unity of character which motivates someone to face challenges for success (Lee, 1997). People with high degree of N-Ach are stimulated by tasks which are inherently meaningful (i.e. high in variety, identity, and significance) and provide both ample knowledge of results and opportunities for independent action and thought (Orpen, 1985). Moreover, when people are faced with tasks that posses such attributes (i.e. variety and identity) to a higher degree, it is expected that they (i.e. high achievers) will respond with high level of performance which end in self satisfaction.

More specifically, McClelland (1976) attributed high need achievers into three: 1) seeking for personal responsibility in decision making; 2) taking risk according to one's ability; and 3) having motivation to learn from the decision made. Hence, high achievers will always have high intention

to present the best effort to achieve aims. Chattopadhyay and Ghosh (2008) concluded the importance of need for achievement as a personality factor in association with entrepreneurial behavior. Need for achievement is found to be a personality factor that differentiates entrepreneurial behavior between entrepreneurs and non-entrepreneurs.

2. Self-efficacy

Another personality factor is self-efficacy which is derived from Bandura (1977). Self-efficacy refers to a person's belief in his or her capability to perform a given task (Bandura, 1977). Furthermore, individuals with high degree of self-efficacy not only prefer challenging activities but also display higher staying power in those pursuits (Bandura, 1997). Therefore, people with high level of self-efficacy tend to put their best efforts to attain their goals. As such, Betz and Hacket (1994) stated that the higher the level of self-efficacy in the early stage of entrepreneurial career, the stronger the entrepreneurial intention is.

In a more detail, Bandura (1986) described four ways to reach self-efficacy. First, repeated success which is considered as the effective way to develop strong self-efficacy. Second, direct learning which enables individuals to predict necessary skills and attitude to finish tasks. In addition to this, evaluation of their own skills is conducted in order to understand the efforts made to achieve a certain goal. Third, social persuasion, including for instance discussion and feedback, provides adequate information to accomplish tasks. Fourth, the evaluation of psychological status which will reduce the stress level when the physical development and emotional capability are ready.

In addition, Krueger (1993) emphasized that the degree of a person's belief in her or his capability in creating a successful business is the main antecedent of entrepreneurial intentions. Similarly, Ryan (1970) argued that self-efficacy plays a role in the development of individual intentions. Self-efficacy provides insight into efficacy judgments which influence actual behavior (Boyd and Vozikis, 1994). As such, integrating self-efficacy into a framework of entrepreneurial behavior will provide better understanding of the entrepreneurial process (Jones, 1997).

B. Environmental factors

Access to capital, access to information, and social network are considered to have an impact on entrepreneurial intentions. These three factors are labeled as 'environmental factors', each of which will be elaborated as follows.

1. Capital access

It is quite obvious that capital availability is the main foundation of a new venture. Capital access is very important for a business start-up especially in developing countries, where support from financial institutions is weak (Indarti and Langenberg, 2004). Entrepreneurs who are engaged in a new venture activity in the early stage, usually have small amount of equity to finance their business. On the other hand, it is quite difficult to acquire debt or external equity (Verheul et al., 2006).

Previous authors stated that difficulties in accessing capital, credit scheme, and financial system are considered as the main obstacle for entrepreneurs' success, particularly in developing countries (i.e. Indarti and Langenberg, 2004; Marsden, 1992; Meier and Pilgrim, 1994; Steel, 1994). However, in developed contries where the financial infrastucture and capital access are efficient, capital access can also be considered as obstacles for entrepreneurs due to high degree of entry

barrier towards employment ratio in many industries. Recent research found that capital access becomes one of the entrepreneur success factors (Indarti, 2009; Indarti and Langenberg, 2004; Kristiansen et al., 2003).

2. Information access

Access to information has been considered as one critical factor for the development and growth of a venture (Duh, 2003; Kristiansen, 2002; Mead and Liedholm, 1998; Swierczek and Ha, 2003). Singh and Krishna (1994) found that strong intention to access information is one of the main characters of Indian entrepreneurs. Information seeking can be based on the frequency of individual contacts with various information sources. Result of the information seeking activity will depend on the availability of the information itself, the individual's effort, and the social network resources. Moreover, information access will also depend on the individual characteristics, such as educational level and infrastructure quality (Kristiansen, 2002).

3. Social networks

Generally, entrepreneurs not only interact with others within the organization but also with others outside the organization. Entrepreneurs develop and use a (social) network to access resources, for instance money, expertise, encouragement, information, and environmental feedback. Networks can be functioned as tools to reduce risks, transaction cost, and strengthen the access to business ideas, information, and capital (Aldrich and Zimmer, 1986). Furthermore, Kristiansen (2003) concluded that social network consists of formal and informal relationships between actors inside a circle which are interrelated and provides pathways for entrepreneurs to access resources needed for establishing, developing, and succeeding a venture.

C. Demographic factors

Previous researches have been studied to examine the impact of demographic factors on entrepreneurial behavior (e.g. Cliff, 1998; Low, 2005; Sinha, 1996). In this study, we considered demographic characteristics of an individual as predictors of her/his intentions to start a new business, namely: age, gender, education, and working experience.

1. Age

The age of the entrepreneur is considered as one predictor of entrepreneurial intentions. Sinha (1996) showed that the vast majority of successful entrepreneurs in India were those who were relatively young. In line with this, Reynolds et al. (2000) argued that the age range of 25-44 years old is the most productive age for being entrepreneur in the West. A study by Kristiansen et al. (2003) among Internet cafes in Indonesia supported that age has a significant correlation towards success.

2. Gender

As male and female have distinctive stereotypes among society, they are also likely to be seen as having different personalities and attitudes toward things (Mueller, 2004) e.g. entrepreneurial attitudes. Further, empirical studies that compared males and females in terms of their potential for entrepreneurship are almost non-existent. Few of them are Kalleberg and Leicht (1991) and Cliff (1998). In terms of performance, Kalleberg and Leicht (1991) found that businesses headed by women were not more likely to go out of business or be less successful than those owned by men. Cliff (1998) noted that,

compared to males, female entrepreneurs tend to set lower business-size thresholds beyond which they prefer not to expand, and to be more concerned with risks attached to fast growth. On the contrary, a study by Lee (1997) found that female entrepreneurs have higher level of need for achievement for being an entrepreneur.

3. Education

Low (2005) found that family background and education system have influence on entrepreneurship among Singapore and Ireland entrepreneurs. Further, Shinnar et al., (2009) stated that although students with business majors (a) rated themselves as more entrepreneurial, (b) were more likely to want to start their own business, (c) felt that entrepreneurial skills were part of their curriculum, (d) felt there was more university stimulation, and (e) were significantly more likely to say they are interested in taking an entrepreneurship course, non-business students still expressed an interest in entrepreneurship. In fact, more than half of the non-business majors also expressed an interest in taking an entrepreneurship course (Shinnar et.al., 2009).

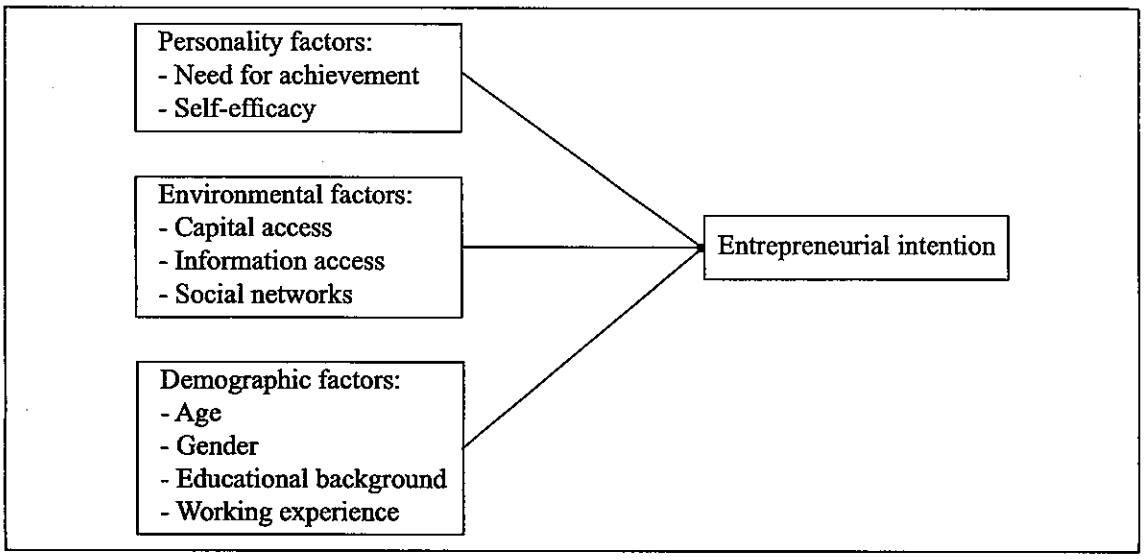
4. Working experience

Previous studies indicated an individual's working experience as a predictor of entrepreneurial intentions (e.g. Kolvereid, 1996; Scott and Twomey, 1988). Individual with working experience tends to have higher entrepreneurial intention compared to those without (Kolvereid, 1996). Similarly, Scott dan Twomey (1988) found that parental influence and working experience will likely influence individual perception towards venture creation and individual attitude towards intention to become an entrepreneur or an employee in an organization. Moreover, individuals' social environment during their youth will conducively support their entrepreneurial intention. On the other hand, Mazzarol et al. (1999) emphasized that individuals who have working experience are not likely to be successful in creating new venture.

Methodology

Based on literature reviews discussed in the previous sections, we classified determinants of entrepreneurial intentions into three factors: personality factors including need for achievement (e.g.

Figure 1. Research Model



McClelland, 1976) and self-efficacy (e.g. Bandura, 1977); environmental factors including information access (e.g. Swierczek and Ha, 2003), capital access (e.g. Marsden, 1992), and social network (e.g. Kristiansen et al., 2003); and demographic factors including age (e.g. Sinha, 1996), gender (e.g. Kalleberg and Leicht, 1991), education background (e.g. Low, 2005), and working experience (e.g. Kolvereid, 1996). Figure 1 depicts a framework for the research.

In general, we argued that all factors (i.e. personality, environmental, and demographic) wouldl have an impact on student's entrepreneurial intentions. The first two hypotheses were related to personality factors, while the other two hypotheses were related to environmental and demographic factors. The following hypotheses are formulated as follows:

Hypothesis 1: Need for achievement was a positive predictor of entrepreneurial intentions.
Hypothesis 2: Self-efficacy was a positive predictor of entrepreneurial intentions.
Hypothesis 3: Environmental factor was a positive predictor of entrepreneurial intentions.
Hypothesis 4: Demographic factors such as age, gender, education, and work experience had an influence on entrepreneurial intentions.

Data

Respondent and data collection procedures

Respondents of this study were undergraduate students from five countries in Asia (i.e. Indonesia, Japan, South Korea, Taiwan and Thailand). These five countries are representatives of Asia which have had a highly rapid development and economic growth in the last few years, called as Asia-Tigers (see ASEAN Development Bank). In addition, those countries have specific characteristics (e.g. culture, infrastructure, business environment) that might influence the attitude and behaviour of individuals (including students) towards entrepreneurial activities. Cromie (2000) argued that country's growth has a close linkage with entrepreneurial activities. Therefore, taking a country setting into account in this study is challenging in order to provide a better understanding on entrepreneurial intentions between countries.

The main purpose of this study was to determine entrepreneurial intentions among potential entrepreneur (i.e. student), data collections were conducted in well-known universities in each country. Obviously, a top university in a country consists of various type students who come across regions, ethnics, and backgrounds. Given this, choosing a top university in each country can provide a good representative of a country. Specifically, the study took place in the following universities: Gadjah Mada University (Indonesia), Hiroshima University of Economics (Japan), National Central University (Taiwan), Seoul National University (Korea), and three top universities in Thailand, namely King Mongkut's Institute of Technology Ladkrabang, Rajamangala University of Technology Thanyaburi, Thammasat University, and Chulalongkorn University. They were selected by purposive sampling method. In purposive sampling or judgment sampling, samples are selected with a specific purpose in mind (Remenyi, 2000).

The research instruments mainly consisted of three independent variables i.e. need for achievement and self-efficacy and environmental factors with several items and one dependent variable to measure entrepreneurial intentions. All items were measured by 7-point Likert scales. In addition, demographic data (gender, age, past work experience, major of study) of respondents were collected.

The questionnaire was developed by Indarti (2002) based on several previous researches. The questionnaire (see Annex) was in five different languages: in Indonesian (for Indonesian students), Japanese (for Japan), in Chinese (for Taiwan), in English (for South Korea), and in Thai and English (for Thailand).

Data collections were conducted around 2004-2009 and the questionnaires were distributed around the universities, especially in the major places where students spent their leisure time, such as university's canteen and computer lab. The questionnaires were distributed directly to the respondents in order to have a high level of response. They were distributed to 846 students; yet. only 650 of them were willing to participate in the study, making the response rate of 76% and these entire returned questionnaires were valid for next analysis. In more detail, 130 Indonesian (response rate 65%), 81 Japanese (response rate 81%), 135 Korean (response rate 100%), 109 Taiwanese (response rate 54%), and 190 Thai students (response rate 100%) filled in the questionnaire. There were no identified patterns for non-responses. They were not willing to participate mostly due to various reasons, e.g. having no time or were busy with other activities at the time of data collection. Table 1 shows the demographic characteristics of the respondents.

As summarized in Table 1, the vast majority (90.8%) of the respondents were under 25 years old. More than half respondents (51.1%) were female. Most of respondents' education was non-business, except for the data from Japan where the questionnaires were distributed in business school, and from Thailand where data collection was conducted at technological universities. Many (70.3%) of the respondents had no working experience, except for Indonesian students (43.9%) who had been working mostly either at public or private sectors.

Table 2 describes all attitudinal variables and the values of each item under each variable (independent and dependent) used in the study.

Reliability of the instrument

Reliability analysis was carried out to measure the internal consistency of the research instrument if this is a multi-item scale. The multi-item scales ensure that the assumption of the interval level of measurement is more defensible than single-item scales (Remenyi et al., 2000). Reliability refers to "*the extent to which a*

Table 1. Demographic characteristics of the respondents

Demographic	Total (n=650)		Indonesia (n=130)		Japan (n=81)		South Korea (n=135)		Taiwan (n=109)		Thailand (n=195)	
	n	%	n	%	N	%	N	%	N	%	n	%
Gender												
Male	318	48.9	64	49.2	64	79.0	60	44.4	52	47.7	78	40.0
Female	332	51.1	66	50.8	17	21.0	75	55.6	57	52.3	117	60.0
Age												
Under 25	590	90.8	110	84.6	79	97.5	107	79.3	101	92.7	193	99.0
25 or above	60	9.2	20	15.4	2	2.5	28	20.7	8	7.3	2	1.0
Educational Background												
Business and Economic	212	32.6	72	55.4	81	100.0	37	27.4	19	17.4	3	1.5
Non-Business and Economics	438	67.4	58	44.6	0	0.0	98	72.6	90	82.6	192	98.5
Working Experience												
Never	456	70.2	73	56.2	78	96.3	92	68.1	63	57.8	150	76.9
Public Sector	30	4.6	10	7.7	0	0.0	7	5.2	6	5.5	7	3.6
Private Sector	164	25.2	47	36.2	3	3.7	36	26.7	40	36.7	38	19.5

Source: Primary data

Table 2. Summary of responses

Variable	Total (n=650)		Indonesia (n=130)		Japan (n=81)		South Korea (n=135)		Taiwan (n=109)		Thailand (n=195)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Needs For Achievement												
I will do very well in fairly difficult tasks relating to my study and my work.	5.36	1.30	5.78	1.06	4.38	1.27	5.20	1.27	5.50	1.27	5.50	1.30
I will try hard to improve on past work performance.	5.54	1.24	6.20	0.98	4.67	1.36	5.39	1.08	5.58	1.23	5.54	1.21
I will seek added responsibilities in job assigned to me.	5.17	1.40	4.69	1.42	4.00	1.24	5.43	1.27	5.50	1.34	5.61	1.17
I will try to perform better than my friends.	5.19	1.38	5.92	1.03	4.38	1.39	5.53	1.24	4.73	1.42	5.05	1.35
Self Efficacy												
I have leadership skills that are needed to be an entrepreneur.	4.35	1.45	4.82	1.39	3.60	1.72	4.41	1.41	4.06	1.30	4.46	1.31
I have mental maturity to start to be an entrepreneur.	4.15	1.45	4.52	1.31	3.57	1.60	4.23	1.45	3.63	1.46	4.38	1.32
Environmental Factors												
I have access to capital to start to be an entrepreneur.	3.40	1.65	3.66	1.50	2.64	1.96	3.40	1.54	2.48	1.52	4.06	1.36
I have good social networks that can be utilized when I decide to be an entrepreneur.	4.24	1.57	4.46	1.54	3.14	2.05	4.21	1.44	4.61	1.38	4.35	1.36
I have access to supporting information to start to be an entrepreneur.	4.08	1.49	4.59	1.43	3.36	1.94	3.79	1.38	4.06	1.31	4.26	1.33
Entrepreneurial Intention												
I will choose a career as an entrepreneur.	3.98	1.72	4.75	1.54	3.56	1.79	3.64	1.64	3.89	1.92	3.93	1.59
I will choose a career as an employee in a company/ organization.*	4.20	1.55	4.40	1.73	4.12	1.67	4.23	1.54	4.44	1.40	3.90	1.44
I prefer to be an entrepreneur rather than to be an employee in a company/organization.	4.56	1.66	5.03	1.55	4.07	1.59	4.22	1.61	4.46	1.79	4.73	1.63

*Note: *measured by 7 point Likert scales from 1=strongly disagree, 7=strongly agree*
Source: Primary data

Table 3. Reliability analysis

Variable	Total (n=650)	
	N of Items	Cronbach Alpha
Needs for Achievement	4	0.761
Self Efficacy	2	0.791
Environmental Factors	3	0.786
Entrepreneurial Intention	3	0.536

Source: Primary data

measuring instrument contains variable error" (Frankfort-Nachmias and Nachmias, 2000). A reliable instrument will provide consistent results when it is used several times. With exception on entrepreneurial intentions, all values of Cronbach's alpha are greater than 0.60 (see Table 3). But Nunally (1978) suggested that values up to 0.60 and even 0.50 can be considered acceptable. We could conclude that the instrument to measure need for achievement, self-efficacy, environmental factors and entrepreneurial intentions would provide a consistent result.

Data analysis

In addition to the descriptive analysis, correlation analysis, multiple regression analysis, and Bonferonni test were also deployed. Correlation analysis was used to determine the effect of each independent variable on the dependent variable, while regression analysis was used to explain the total effect of the independent variables on the entrepreneurial intention. In this study, demographic factors (i.e. age, gender, education and working experience) were treated as dummy variable, by converting

the score of each variable into two groups i.e. age (under 25 years old = 0; 25 years old and above = 1); gender (female = 0; male = 1); education (non-business and economics = 0; business and economics = 1); working experience (no working experience = 0; have working experience = 1). Table 4 shows the result of descriptive analysis. Table 5 depicts the result of the regression analysis. In addition to this, ANOVA's *Bonferonni test* was carried out to examine whether there were significant differences among means in each country (Table 6).

Table 4. Results of descriptive analysis

Variable	Mean (n=650)	SD (n=650)	Correlation			
			Needs for Achievement	Self-efficacy	Environmental factors	Entrepreneurial Intentions
Needs for Achievement	5.31	1.02	1	0.321**	0.211**	0.170**
Self-efficacy	4.25	1.31		1	0.642**	0.467**
Environmental Factors	3.91	1.32			1	0.432**
Entrepreneurial Intention	4.11	1.19				1

*** p≤0.05*
Source: Primary data

Table 5. Results of regression analysis

Variable	Beta					
	Total (n=650)	Indonesia (n=130)	Japan (n=81)	South Korea (n=135)	Taiwan (n=109)	Thailand (n=195)
Needs for Achievement	0.036	0.038	0.041	0.005	0.165*	-0.058
Self Efficacy	0.309***	0.351**	0.215	0.233**	0.356***	0.315***
Environmental Factors	0.219***	0.155	0.211	0.271***	0.176*	0.266***
Age	-0.084**	-0.13	0.039	-0.15	0.106	-0.062
Gender	0.087**	-0.013	0.009	0.15	0.176**	0.061
Educational Background	-0.015	-0.180*	n/a	-0.041	0.12	0.054
Working Experiences	0.057	0.119	-0.071	-0.017	0.009	0.085
R-square	0.263	0.282	0.142	0.233	0.431	0.302
Adjusted R-square	0.255	0.241	0.073	0.191	0.392	0.276
F (7, n-8)	32.714***	6.840***	2.043*	5.514***	10.929***	11.550***

*** p≤0.10, ** p≤0.05, *** p≤0.01*
Source: Primary data

Table 6. Multiple comparisons (Bonferonni Test)

Dependent Variable	(I) Country	(J) Country	Mean Difference (I-J)	F
Needs for Achievement	Indonesia	Japan	1.29198*	25.624*
		Taiwan	.32202	
		South Korea	.26481	
		Thailand	.22436	
Self-efficacy	Indonesia	Japan	1.08666*	12.961*
		Taiwan	.82904*	
		South Korea	.35085	
		Thailand	.25000	
Environmental Factors	Indonesia	Japan	1.19319*	15.720*
		Taiwan	.52592*	
		South Korea	.43599	
		Thailand	.01282	
Entrepreneurial Intention	Indonesia	Japan	.65084*	6.936*
		Taiwan	.48600*	
		South Korea	.59734*	
		Thailand	.20513	

*Note: *significant at p<0.05*
Source: Primary data

Result and Discussion

The research found that self-efficacy and environmental factors (i.e. capital access, information access, and social network) significantly influenced entrepreneurial intentions among Asian students. In the context of demographic factors, only age and gender were significantly found to be good predictors of entrepreneurial intentions among Asian students. However, the explanatory variables of the whole model was 25.5% ($F = 32.71$, $p < 0.01$). Presentation and discussion on the regression analysis for each hypothesis is elaborated in the following sub-sections.

Personality factors

1.Need for achievement

Need for achievement was expected to have an impact on student's entrepreneurial intentions as stated in Hypothesis 1. As can be seen in Table 5, regression analysis for all countries found that need for achievement did not significantly influence student's entrepreneurial intentions. However, regression analysis for each country provided deeper figure on the positive effect of need for achievement on entrepreneurial intentions among Taiwanese students.

In the case of Taiwanese students, need for achievement was significantly ($B = 0.165$, $p < 0.10$) found to have a positive impact on entrepreneurial intentions. In this sense, the higher the degree of need for achievement among Taiwanese students, the higher the degree of entrepreneurial intentions was. This finding substantially verified previous studies (e.g. Lee, 1997; Orpen, 1985). In Taiwan setting, most Taiwanese students might have ambitions to start a new venture after finishing their study. So, to be a young successful Taiwanese entrepreneur is one of the considerable future achievements or careers. Moreover, Taiwan nowadays has been struggling by allocating its resources to be a stronger economy entity. Yang and Li (2008) found that the government of China, where Taiwan is a part of it, systematically encourages entrepreneurship development nationally. The government invites private sectors and society in general to take part in this initiative, which to some extent has influenced Taiwanese students to be interested in becoming an entrepreneur.

2.Self-efficacy

Hypothesis 3 stated that self-efficacy had an impact on entrepreneurial intention. As stated earlier, the regression analysis found that self efficacy did significantly ($B = 0.309$, $p < 0.01$) influence entrepreneurial intentions among Asian students. When comparing among countries, we found that self-efficacy significantly had a positive impact on entrepreneurial intentions among Indonesian, South Korean, Taiwanese, and Thai students, but not for Japanese students. The findings supported the previous research (e.g. Bandura, 1986; Boyd and Vozikis, 1994; Jones, 1997; Krueger, 1993). The higher the degree of students' self efficacy, the stronger the intentions to be a young entrepreneur is. As discussed, self-efficacy is defined as individual's belief in her/his capability to accomplish a certain task. In the context of this study, the individual capability was measured by leadership skills and mental maturity. We may conclude that among Asian students except Japanese, they have strong beliefs on their capabilities (i.e. leadership skills and mental maturity) which stimulate them to be an entrepreneur after finishing the study. However, this was not the case of Japanese students, where we found – by using *ANOVA Bonferonni test* – that the score of self-efficacy was significantly lower compared to that of Indonesian students (Table 6).

Culture-specific traits of Japanese students might explain this finding. In Japan, keeping harmony in every aspect of private and professional life is the most important things in the society (Haitani, 1990). Consequently, individual's priorities/goals become meaningless. In this sense, individual believe in his/her ability to accomplish tasks, called self-efficacy become less/not an important factor. In short, from the Japanese's perspective, tasks completion or accomplishment is a result of group/team activity.

Environmental factors

In the context of this study, environmental factors were measured by student's perception on their capital access, information access and social network in supporting business. As shown in Table 5, environmental factors were significantly ($B = 0.219$, $p < 0.01$) found to be a good predictor of entrepreneurial intentions for Asian students. This finding substantially supported hypothesis 4 as well as the previous findings (e.g. Kristiansen et al., 2003; Swierczek and Ha, 2003). However, we note here that this was not the case for Indonesia and Japan. Based on this, students in three countries (i.e. Taiwan, South Korea, and Thailand) perceived that they have a better 'readiness' in terms of access to capital, access to information and a good social network. The higher the score of 'readiness' or environmental factor, the higher the entrepreneurial intentions of the students to start new venture.

Demographic factors

Hypothesis 5 stated that demography factors such as age, gender, education and work experience had an influence on entrepreneurial intentions. In this section, each aspect will be discussed in detail.

1. Age

As stated previously, age of the respondents was grouped into two, namely young (below 25 years old) and old (25 years old above). The regression analyses for all countries (see Table 5) found an interesting result that age significantly ($B = -0.084$, $p = 0.05$) influenced on entrepreneurial intention among Asian students, in a negative direction. This means that the older the students, the lower the entrepreneurial intentions was. This finding supported the previous study by Sinha (1996) but different with a study by Reynolds (2000). In most Asian countries, when people are getting older, they tend to search for stable lives. As when some companies recently did downsizing in order to cut costs, there was no other way except creating even the smallest new venture. But in Japan, university graduates tend to seek work opportunity in a company instead of creating a new venture, proved by long and difficult application process, usually since their 3rd year in university.

2. Gender

Similar to age of the respondent, we grouped gender into two: female and male. A regression for all countries found that gender had a positive significant ($B = 0.087$, $p < 0.05$) impact on entrepreneurial intentions among Asian students (see Table 5). In detail, this was also the case for Taiwanese students. Based on this, we can say that the intention to become an entrepreneur was higher among Asian male students (i.e. Taiwan) than among female students. The current result is in line with previous findings (e.g. Kalleberg and Leicht, 1991; Mueller, 2004).

3. Educational background

The effect of education on entrepreneurial intentions for Indonesian students could only be explained in a regression analysis (see Table 5). Surprisingly, background of non-economic and business education significantly influenced the intentions to be an entrepreneur in the future. In other words, students whose background was economic and business education were unlikely to start a new business in the future. The current study did not support the previous studies (e.g. Lee, 1997; Sinha, 1996). This finding may have an implication for universities/higher educations. Universities are challenged to improve their curriculum or teaching materials/methods to give facilities and opportunities for students to experience real entrepreneurship.

4. Working experience

Working experience was expected to have an impact on entrepreneurial intentions among students. From the regression analysis for all countries and each country, the results provided no significant findings. Therefore, this finding could not support the previous studies (e.g Kolvereid, 1996; Mazzarol et al., 1999; Scott and Twomey, 1988).

Conclusion

The current study was intended to examine dominant factors which influenced students' entrepreneurial intentions in the Asian countries. The setting of Asian countries (i.e. Indonesia, Japan, South Korea, Taiwan, and Thailand) was taken into account in order to provide a broader understanding of entrepreneurial intentions factors in various countries. This study found that determinants of entrepreneurial intentions (i.e. personality, environmental and demographic) were different among the Asian countries. The differences may be due to various characteristics, environmental factor, and demographical background of the respondents.

Several important points could be drawn from the results of this study, as follows:

(1) In general, the entrepreneurial intentions among Asian could be explained by self-efficacy, environmental factors (i.e. access to capital, information, and social networks), and demographic factors (i.e. age and gender). The model provided 25.5% of the total variance explained.

(2) More specifically, need for achievement, self-efficacy, environmental factors, and gender had a significant influence on the entrepreneurial intentions among Taiwanese students. Among Indonesian students, self-efficacy and education were found to be significant predictor of entrepreneurial, while self-efficacy and environmental factors had a significant impact on the entrepreneurial intentions in the context of Korean and Thailand students. However, the determinants of entrepreneurial intentions used in this study did not provide any explanation in the context of Japanese students. Additionally, the current study showed that entrepreneurial intentions among students in Asian countries were diverse. The determinants of the intentions were also found to vary from country to country. Despite the fact that cultural and other country specific factors were beyond the focus of this study, they may also have an impact on the entrepreneurial intentions among Asian students.

The current study was not without limitations. This study was using data from several countries. As discussed in the empirical sections, the study could not capture demographic data from various backgrounds as expected due to limitations in data collection. Further, research should be able to capture more diverse respondents

so that the findings could enrich the discussion. In addition to this, adding other variables (such as locus of control and family background effect) into the model might increase the percentage of total variance. Hence, it may capture a broader figure of entrepreneurial intentions.

References

Aldrich, H., and Zimmer, C. (1986), Entrepreneurship through Social Network, in *The Art and Science of Entrepreneurship,* Sexton, D.L. and Smilor, R.W. (Eds), Cambridge: Ballinger Publishing, 3-25.

Asia Development Bank (2009), *Key Indicators for Asia and and the Pacific 2009, Enterprises in Asia: Fostering Dynamics in SME.*

Bandura, A. (1977), *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1986), *The Social Foundation of Thought and Action*, Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1997), *Self-Efficacy: The Exercise of Control*, New York: W.H. Freeman & Company.

Bird, B. and Jellinek, M. (1988), The Operation of Entrepreneurial Intentions, *Entrepreneurship Theory and Practice,* winter, 21-29

Boyd, N. G. and Vozikis, G. S. (1994), The Influence of Self-Efficacy on the Development of Entrepreneurial Intentions and Action, *Entrepreneurship Theory & Practice,* 18 (4), 63-77.

Brockhaus, R.A. (1975), I-E Locus of Control Scores as Predictors of Entrepreneurial Intentions, *Academy of Management*, 433-435.

Chattopadhyay, R. and Gosh, A.K. (2008), Entrepreneurial Intention Model-Based Quantitative Approach to Estimate Entrepreneurial Success, *Journal of Small Business and Entrepreneurship,* 21 (1), 1-22.

Choo, S. and Wong, M. (2006), Entrepreneurial Intention: Triggers and Barriers to New Venture Creations in Singapore, *Singapore Management Review*, 28 (2), 47-64.

Cliff, J. E. (2000), Does One Size Fit All? Exploring Relationship between Attitudes towards Growth, Gender and Business Size, *Journal of Business Venturing,* 13 (6), 523-542.

Cromie, S. (2000), Assessing Entrepreneurial Inclinations: Some Approaches and Empirical Evidence, *European Journal of Work and Organizational Psychology*, 9 (1), 7-30.

Duh, M. (2003), Family Enterprises as an Important Factor of The Economic Development: The Case of Slovenia, *Journal of Enterprising Culture* , 11 (2), 111-130.

Evans, M. G. (1974), Extensions of A Path-Goal Theory of Motivations, *Journal of Applied Psychology,* 59, 172-178.

Faustino, J. (2005), The Spirit of Entrepreneurship in Asia, *Conference Report of Unleashing Entreprenurship,* Ottawa, Canada.

Frankfort-Nachmias, C. and Nachmias, D. (2000), *Research Methods in Social Sciences,* 5th Ed., London: Arnold.

Giles, M. and Rea, A. (1970), Career Self-Efficacy: An Application of The Theory of Planned Behaviour, *Journal of Occupational & Organizational Psychology*, 73 (3), 393-399.

Gorman, G., Hanlon, D., and King, W. (1997), Entrepreneurship Education: The Australian Perspective for the Nineties, *Journal of Small Business Education*, 9, 1-14.

Green, R., J., Dent, D.M., and Tyshkovsky A. (1996), The Russian Entrepreneur: A Study of Psychological Characteristics, *International Journal of Entrepreneurship Behavior and Research*, 2 (1), 49-58.

Haitani, K. (1990), The Paradox of Japan's Groupism: Threat to Future Competitiveness?, *Asean Survey,* 30 (3), 251-156.

Indarti, N. (2002), Determinant of Entrepreneurial Intentions among Norwegian Students, *Siviløkonom Thesis*, Agder University College, Norway.

Indarti, N. (2004), Factors Affecting Entrepreneurial Intentions among Indonesian Students, *Jurnal Ekonomi dan Bisnis,* 19 (1), 57-70.

Indarti, N. (2009), What SMEs Need from University? Evidences from Indonesia, *Proceeding of RENT XXIII Research Entrepreneurship and Small Business*, Budapest, Hungary.

Indarti, N. and Langenberg, M. (2004), Factors Affecting Business Success among SMEs: Empirical Evidences from Indonesia, *Proceedings of The second bi-annual European Summer University*, University of Twente, Enschede, The Netherlands.

Indarti, N. and Rostiani, R. (2008), Entrepreneurial Intentions among Student: Study Case of Indonesian, Japan and Norwegian Students, *Journal of Business and Economics*, 23 (4).

Ismail, M., Khalid, S. A., Othman, M., Jusoff, K., Rahman, N. A., Kassim, K. M, and Zain, R. S. (2009), Entrepreneurial Intention among Malaysian Undergraduates, *International Journal of Business and Management* , 4 (10), 54-60

Jones, K. (1997), An Exploration of The Relationship between Male and Female Perceptions of Opportunity for Occupational Goal Attainment and Propensity for Entrepreneurship, *Academy of Entrepreneurship Journal* , 2 (2), 30-43.

Kalleberg, A. L. and Leicht, K. T. (1991), Gender and Organizational Performance: Determinants of Small Business Survival and Success, *Academy of Management Journal,* 34 (1), 136-161.

Katz, J. and Gartner, W. (1988), Properties of Emerging Organizations, *Academy of Management Review,* 13 (3), 429-441.

Kolvereid, L. (1996), Prediction of Employment Status Choice Intentions, *Entrepreneurship Theory and Practice,* 21 (1), 47-57.

Kourilsky, M. L. and Walstad, W.B. (1998), Entrepreneurship and Female Youth: Knowledge, Attitude, Gender Differences, and Educational Practices, *Journal of Business Venturing*, 13 (1), 77-88.

Kristiansen, S. (2002), Competition and Knowledge in Javanese Rural Business, *Singapore Journal of Tropical Geography,* 23 (1), 52-70.

Kristiansen, S., Furuholt, B., and Wahid, F. (2003), Internet Cafe Entrepreneurs: Pioneers in Information Dissemination in Indonesia, *The International Journal of Entrepreneurship and Innovation* , 4 (4), 251-263.

Krueger, N. F. and Carsrud, A. L. (1993), Entrepreneurial Intentions: Applying the Theory of Planned Behavior, *Entrepreneurship & Regional Development*, 5 (4), 315-330.

Lee, J. (1997), The Motivation of Women Entrepreneurs in Singapore, *International Journal of Entrepreneurial Behaviour and Research* , 3 (2), 93-110.

Low, L. (2005), Entrepreneurship Development in Ireland and Singapore, *Journal of the Asia Pacific Economy* , 10 (1), 116-138

Marsden, K. (2002), African Entrepreneurs – Pioneer of Development, *Small Enterprise Development,* 3 (2), 15-25.

Mazzarol, T., Volery, T., Doss, N., and Thein, V. (1999), Factors Influencing Small Business Start-Ups, *International Journal of Entrepreneurial Behaviour and Research,* 5 (2), 48-63.

McClelland, D. (1961), *The Achieving Society*, Princeton, New Jersey: Nostrand.

Mead, D. C. and Liedholm, C. (1998), The Dynamics of Micro and Small Enterprise in Developing Countries, *World Development,* 26 (1), 61-74.

Meier, R. and Pilgrim, M. (1994), Policy-Induced Constraints on Small Enterprise Development in Asian Developing Countries, *Small Enterprise Development* ,5 (2), 66-78.

Misra, S. and Kumar, E.S. (2000), Resourcefulness: A Proximal Conceptualization of Entrepreneurial Behavior, *The Journal of Entrepreneurship* , 9 (2), 135-154.

Mueller, S.L. (2004), Gender Gaps in Potential for Entrepreneurship across Countries and Cultures, *Journal of Developmental Entrepreneurship,* 9 (3), 199-220.

Morrison, A. (2000), Entrepreneurship: What Triggers It?, *International Journal of Entrepreneurship Behavior & Research* ,6 (2), 59-71.

Nunally, J. C. (1978), *Psychometric Theory,* New York: McGraw-Hill.

Remenyi, D., Williams, M.B., and Swartz, E.A. (2000), *Doing Research in Business and Management: An Introduction to Process and Method,* London: Sage Publications.

Reynolds, P. D., Hay, M., Bygrave, W. D., Camp, S.M., and Aution, E. (2000), Global Entrepreneurship Monitor, *Executive Report,* Babson College, Kauffman Center for Entrepreneurial Leadership, and London Business School.

Orpen, C. (1985), The Effects of Need for Achievement and Need for Independence on The Relationship between Perceived Job Attributes and Managerial Satisfaction and Performance, *International Journal of Psychology,* 20, 207-219.

Scott, M. and Twomey, D. (1988), The Long-Term Supply of Entrepreneurs: Students` Career Aspirations in Relation to Entrepreneurship, *Journal of Small Business Management*, 26 (4), 5-13.

Sengupta, S. K. and Debnath, S. K. (1994), Need for Achievement and Entrepreneurial Success: A Study of Entrepreneurs in Two Rural Industries in West Bengal, *The Journal of Entrepreneurship,* 3 (2), 191-204.

Shinnar, R., Pruett, M., and Tonet, B. (2009), Entrepreneurship Education: Attitudes across Campus, *Journal of Education for Business,* (January/February), 151-158.

Sinha, T. N. (1996), Human Factors in Entrepreneurship Effectiveness, *Journal of Entrepreneurship,* 5 (1), 23-29.

Singh, K. A. and Krishna, K.V.S.M. (1994), Agricultural Entrepreneurship: The Concept and Evidence, *Journal of Entrepreneurship*, 3 (1), 97-111.

Steel, D. (1994), Changing the Institutional and Policy Environment for Small Enterprise Development in Africa, *Small Enterprise Development,* 5 (2), 4-9.

Swierczek, F. W. and Ha, T. T. (2003), Entrepreneurial Orientation, Uncertainty Avoidance and Firm Performance: An Analysis of Thai and Vietnamese SMEs, *International Journal of Entrepreneurship and Innovation,* 4 (1), 46-58.

Verheul, I., van Stel, A., and Thurik, R. (2006), Explaining Female and Male Entrepreneurship at the Country Level, *Entrepreneurship and Regional Development* ,18 (March), 151-183.

Yang, J.Y. and Li, J. (2008), The Development of Entrepreneurship in China, *Asia Pacific Journal of Management*, 25 (2), 335-359.

Annex. Questionnaire

		strongly disagree						*strongly agree*
N1	I will do very well in fairly difficult tasks relating to my study and my work.	1	2	3	4	5	6	7
N2	I will try hard to improve on past work performance.	1	2	3	4	5	6	7
N3	I will seek added responsibilities in job assigned to me.	1	2	3	4	5	6	7
N4	I will try to perform better than my friends.	1	2	3	4	5	6	7
L1	Diligence and hard work usually lead to success.	1	2	3	4	5	6	7
L2	If I do not succeed on a task, I tend to give up.	1	2	3	4	5	6	7
L3	I do not really believe in luck.	1	2	3	4	5	6	7
S1	I have leadership skills that are needed to be an entrepreneur.	1	2	3	4	5	6	7
S2	I have mental maturity to start to be an entrepreneur.	1	2	3	4	5	6	7
I1	I have access to capital to start to be an entrepreneur.	1	2	3	4	5	6	7
I2	I have good social networks that can be utilized when I decide to be an entrepreneur.	1	2	3	4	5	6	7
I3	I have access to supporting information to start to be an entrepreneur.	1	2	3	4	5	6	7
E1	I will choose a career as an entrepreneur.	1	2	3	4	5	6	7
E2	I will choose a career as an employee in a company/an organization.	1	2	3	4	5	6	7
E3	I prefer to be an entrepreneur rather than to be an employee in a company/organization.	1	2	3	4	5	6	7