African Journal of Business Management Vol. 6(15), pp. 5193-5200, 18 April, 2012
Available online at http://www.academicjournals.org/AJBM
DOI: 10.5897/AJBM11.1448
ISSN 1993-8233 ©2012 Academic Journals

Full Length Research Paper

Is entrepreneurial education available for graduates?

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Accepted 28 December, 2011

The aim of this study is to investigate if entrepreneurial courses can enhance the entrepreneurial intention of students, by a survey conducted on students of 34 universities department with marketing- and logistics-management-related programs in Taiwan. Of the questionnaires recovered from 22 universities of science and technology, 847 copies are valid. The results show that entrepreneurial courses and entrepreneurial intentions are uncorrelated with one another. Although, entrepreneurial intentions correlate with academic performance, school attribute, gender and family entrepreneurial experience, but are uncorrelated to part-time work experience and in which year students are studying.

Key words: Entrepreneurial intention, entrepreneurial education, entrepreneurship.

INTRODUCTION

Entrepreneurial education has been thriving in Taiwan in recent years. In terms of the number of schools opening entrepreneurship-related courses, there were 18 universities opening related courses in 2003 and the number increased to 89 in 2007. In terms of course variety, there were 102 courses in 2005 (Liao, 2008). The variety expanded to 550 related courses in 2009, including 9 universities opening degree programs and 33 universities credit programs (Lai, 2010). The Ministry of Education (MOE) of Taiwan even launched the U-Star Plan in 2009 to provide students with early contacts with entrepreneurship and related entrepreneurship services, including entrepreneurship guidance services. Before the MOE's U-Star Plan, private sectors have organized different business plan competitions to encourage entrepreneurship in students and arouse their interest. It included WeWin, TiC100 and Longtern Dragon (Chen, 2008). To determine if entrepreneurship courses are effective in stimulating entrepreneurship intentions in students is the first motivation of this study.

In the 1990s, 55% of management college students and 66.9% of high school students in the USA were interested in entrepreneurship (Wang and Wong, 2004). According to the statistics of the U.S. Small Business Administration (SBA), two thirds of college students included entrepreneurship in their career planning in 2001 (Shinnar et al., 2009).

In the UK, 34.3% students were interested in entrepreneurship in the 1980s. In Singapore, about 5.3% university students were self-employed in the 1990s (Wang and Wong, 2004). Gong and Hsieh (2009) discovered that 51.8% students of Chongqing University in China were interested in entrepreneurship. In a survey on the entrepreneurship intent of university students, Chen and Song (2011) found that the percentage was at medium level. Additionally, many researchers believe that gender, part-time work experience, academic performance and family entrepreneurship experience are major factors affecting entrepreneurship (Brockhaus, 1980; Hisrich and Peter, 1989; Krueger, 1993 ; Neider, 1987). To determine the factors affecting entrepreneurship intentions in students of Taiwan is the second motivation of this study.

The aim of this study is to investigate if entrepreneurship courses can enhance the entrepreneurship intention of students and the demographic variants relating to entrepreneurship.

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LITERATURE REVIEW

Entrepreneurship and entrepreneurship intentions

The term entrepreneurship owes its origin to the morph entrepreneur, which in turn originates from the 12th century French compound verb entreprendre (*entre* + *prendre*). In short, it means "to undertake" in modern English (Hoang and Huang, 2008; Liao, 2008). Simply speaking, entrepreneurship is the act of creating a new business (Liu and Hsieh, 2006). From the viewpoint of economics, entrepreneurship refers to the combining of the following production elements for productive activities: labor, knowledge, technology, management and capital. Entrepreneurship differs from employment by content, because the latter refers to the provision of production elements; while the former denotes the combining of production elements (Chin, 2005). Lo et al. (2007) defined entrepreneurship as a process of creating profit. In this process, entrepreneurs discover, identify and develop business opportunities; and develop new products or cultivate new markets by re-using resources. Subsequently, they create wealth and establish or undertake companies or organizations. Entrepreneurship refers to the entrepreneurs' effort to discover, assess or create business opportunities based on the entrepreneurial spirit (Shane and Venkataraman, 2000). 'Innovation' is the core value of entrepreneurship. Hou and Wang (2009) classified entrepreneurship into independent entrepreneurship, partnership entrepreneurship and family entrepreneurship.

Concluding from the aforestated, this study defines entrepreneurship as a combination of production elements including labor, knowledge, technology, management and capital. Then, entrepreneurs discover, assess or create business opportunities in the entrepreneurial spirit to engage in productive activities. This includes creating a new business, obtaining distribution or manufacturing franchise, acquiring an established enterprise or continuing a family business.

Contents of entrepreneurship education

According to Bechard and Toulouse (1998) study, entrepreneurship education was a series of training courses for educating students with the formation concepts and development models of enterprises. The entrepreneurship education not only prepares students for starting up their own businesses, but also exerts their expertise at a higher level. Gottleib and Ross (1997) considered entrepreneurship education as referring to the education of applying creative thoughts and reforms to business. In sum, entrepreneurship education is a system work of education developing the entrepreneurial awareness, entrepreneurial thoughts and entrepreneurial skills of students by means of education. Smith (2003) pointed out that entrepreneurship education was the education developing and enriching the basic entrepreneurial skills of students to equip them with the capacity to plan entrepreneurship for a particular business or commerce. It further develops their sense of purpose, self motivation, innovation awareness and adventurous spirit. That is to say, entrepreneurship education should aim at cultivating students to foresee business opportunities, discover potential and latent consumers, understand market demands, develop creativity, and plan and implement business projects (Chang, 2006). Shepherde (2000) mentioned that entrepreneurship education can reduce the risk of entrepreneurship failures. McMullan and Long (1987) believed that an entrepreneurship program should include skill-building courses, such as negotiation, leadership, creative thinking, technical innovation and new product development. After analyzing the teaching plan of 18 entrepreneurship courses, Fiet (2001) induced 6 syllabuses, including strategy analysis, management knowhow, risk management, finance and banking, creativity and discovery of entrepreneurship opportunities. Chou (2005) pointed out that entrepreneurship courses, practical plans, instructor training and the social support system are all factors affecting entrepreneurship education.

Concluding from the above, entrepreneurial programs can be designed for undergraduate students in order to equip them with entrepreneurial skills. In addition to prepare students for entrepreneurship, entrepreneurial education helps students to exert expertise at a higher level and equip them with innovation competence, entrepreneurial spirit and the practical skills for enterprising.

Owusu-Ansah and Flemin (2002) pointed out that traditional education aimed at equipping students with obedience, repetition of the same work experience and employment skills. In contrast, entrepreneurship education should presume that students have the ability to determine and create their own job opportunities. Gure et al. (2010) discovered that entrepreneurship education is unable to motivate entrepreneurship in the tourism students of Turkey and the UK. These students believe that the entrepreneurial spirit mentioned in entrepreneurship education, including creativity, innovativeness, risk undertaking and opportunity search, cannot be taught with traditional teaching methods. In fact, many business plan competitions in Taiwan are competitions of creativity rather than competitions of entrepreneurship. Therefore, students are unable to put into practice the ideas and concepts into their business plan (Chen and Lai, 2007). Liu (2001) suggested that industry-academia cooperation, a standing organization for resource planning, instructors and their teaching methods, entrepreneurship-related research, well-defined objectives, and the establishment of a knowledge base for guiding entrepreneurship should be emphasized in developing entrepreneurship education. After analyzing

the entrepreneurship programs offered by universities in Taiwan, Song (2008) discovered that none of these programs equipped students with the knowledge and skills required by entrepreneurship because these programs overemphasized on innovation in the front end and operation on back end and courses concerning to assessment and selection choices and planning of entrepreneurship in the middle were it inadequate. Even at worse, they lacked opportunities for practice and integration with social resources. After all, instructors in Taiwan are unable to share their experience in solving entrepreneurial problems with students in the absence of real entrepreneurship experience (Chang, 2006). For this reason, Hsieh (2008) suggest that practical entrepreneurial experience can be converted into concrete and systemic teaching materials to plan and develop the entrepreneurship curriculum specific for Taiwan in order to deepen and integrate theory with practice. Chang (2006) further suggested that field instructors should be hired to help students put theory into practice.

Demographic variants affecting entrepreneurship intentions

Gender

Traditionally, males and females are assigned different roles in Taiwan. As a result, most entrepreneurs are male. In 2008, 788,433 enterprises were owned by males, and 439,852 enterprises by females (Small and Medium Enterprise Administration, 2009). According to Chen and Wu's (2007) study, the thriving IT industry, service industry and small and medium enterprises (SMEs) have promoted women entrepreneurship. Chen and Sung (2011) discovered that male university students have stronger entrepreneurship intentions than female university students. Wang and Wong (2004) found that male university students are more interested in entrepreneurship than female university students in Singapore. Shinnar et al. (2009) discovered that male students have stronger entrepreneurship interests than female students. Hou and Wang (2009) pointed out that restaurants and beauty shops are the most common businesses started by female university students in Beijing City. However, Hu (2008) discovered that gender does not play a significant role in entrepreneurship intentions in hospitality students of universities of science and technology.

Academic performance

In Taiwan, junior school students with better academic performance usually continue their study at comprehensive senior high schools and comprehensive universities; and some even continue postgraduate programs and finally stay in the academic circle or pursue a career in the government. In contrast, those with lower academic performance often continue their study at vocational schools. As it is also difficult for them to start a career in the government, many choose entrepreneurship. Moreover, as many well-reputation schools in Taiwan are public schools, students with good academic performance will naturally go to public schools, and students with lower academic performance need go to private schools. Therefore, the academic performance of public school students is naturally better than that of private school students. In this study, it is assumed that students with better academic performance have lower entrepreneurship intentions.

Part-time work experience

Chen (1988) discovered that entrepreneurs had at least 3 years of work experience. Chen and Wu (2007) further found that entrepreneurs had related work experience. Hu (2008) discovered that those with work experience had a better entrepreneurship attitude than those who had none. However, Chen and Song (2011) found no significant difference between both groups in their research. Students with part-time work experience can understand the workplace environment earlier and learn things that can positively motivate them toward entrepreneurial intention.

Family entrepreneurship experience

'Patriarchy' always exists in Chinese family businesses. Also, a business family always provides better access to business knowledge. As a result, many entrepreneurs have successful business-parents (Chen and Wu, 2007; Liao and Weng, 2008).

Cooper and Dunkelberg (1987) found that many entrepreneurs come from business families or had family with entrepreneurial experience. Butler and Herring (1991) also pointed out that children benefit from the entrepreneurial experience of their parents when they started their own businesses. Chen and Song (2011) discovered in his survey that university students who were from a family with entrepreneurial experience had stronger entrepreneurship intentions than those who had none.

Wang and Wong (2004) pointed out those universities students from a business family in Singapore showed greater interest in entrepreneurship. Pan and Chao (2006) also found that 51.2% students with business-parents from Wenzhou University in China had entrepreneurship intentions. Also, 42.36% university students from Zhejiang, China, also admitted that their entrepreneurship intentions were motivated by their family (Gao, 2009).

RESEARCH METHODS

Instrument development

The major data collection instrument used in this study was a questionnaire. The questionnaire was constructed according to the research purpose and literature review. The final version of the questionnaire was developed after team discussion in an effort to increase the reliability and validity of the questionnaire. The survey consisted of Likert-type scale questions and several demographic questions. Students' entrepreneurship intention was measured as their thought and interest of starting up a business. Both questions were measured on a 5-point Likert type scale. The first question is ranging from 1 (never) to 5 (I have a definite plan). The second one is also from 1 (not Interesting at all) to 5 (interested).

Sampling procedure

The sampling method employed was a convenient and non-probability sampling approach. The questionnaire was distributed to the samples selected from 34 university departments with marketing- and logistics-management-related courses through the departments' chairpersons for the departments' chairpersons to distribute the questionnaires to 40 students in the day school each. After follow-up letters were sent to those not responding to our questionnaire to increase the response rate, a total 22 universalities of science and technology send the questionnaires back. After eliminating those with incomplete answers and the invalid copies, we had a total of 847 valid copies. Questionnaires answered by fresher were further eliminated since they have not taken any entrepreneurship-related courses. As a result, our total sample population size was 762 copies.

After consulting the availability of courses relating to entrepreneurship management with department chairpersons, the researchers visited the corresponding departments to check the relevant courses. After searching the curricula of these departments, the researchers discovered that 12 departments have opened related courses and 10 departments do not have related courses.

Sample characteristics

The total sample population size was 762. Among them, there were 287 men (37.7%) and 475 women (62.3%), 330 (43.3%) sophomores, 371 (48.7%) juniors and 61 (8.0%) seniors. Of all the students, there were 66 (8.7%) students from public school, 696 (91.3%) from private school. 141 (18.5%) students' family had entrepreneurial experience, while 621 (81.5%) students' family had no entrepreneurial experience. In addition, 648 (85%) students had part-time work experience, while 114 (15%) students had no part-time work experience.

RESULTS

34.25% of the students of universities of science and technology have entrepreneurship intentions in this study. Although, the percentage is lower than that of the USA and China, it is more or less the same as that of the UK.

Table 1 shows the results of the Chi-square test. The results show that entrepreneurship intentions seem uncorrelated with the availability of entrepreneurship courses. This suggests that there is much room for the promotion and development of entrepreneurship education in Taiwan. In fact, this result corresponds to the opinion of Gurel et al. (2010) and Owusu-Ansah and Flemin (2006). Instead of instructing students in traditional teaching methods, entrepreneurship education should presume that students have the ability to determine and create their own job opportunities. Lobler (2006) also pointed out that traditional management education overemphasizes knowledge migration and learners simply received such knowledge passively. In contrast, entrepreneurship should include the inspiration and motivation of innovativeness and creativity. Instead of instructing students, instructors should support students in their learning. Also, instructors or textbooks should not be the only sources of entrepreneurship knowledge and skills. The aim of education is to develop learning, self-determination and self-management in students. Leaning activities should include doing, thinking and talking. Therefore, unlike traditional learning strategies, entrepreneurship learning should emphasize the participation and realization of students; and voluntary participation and learning should be focused on in the teaching strategies.

Table 1 also shows that private school students have stronger entrepreneurship intentions than public school students. Students with lower academic performance have stronger entrepreneurship intentions than students with better academic performance. This finding reveals that students with lower academic performance are more likely to start their own business because it is more difficult for them to find a job in the government or an ideal job in Taiwan.

Male university students have stronger entrepreneurship intentions than female university students. This result is similar to the finds of Chen and Song (2011), Shinnar et al. (2009) and Wang and Wong (2004) and matches the Taiwan's SMEA statistics showing that male entrepreneurs are more than female entrepreneurs. However, this result differs from the finds of Hu (2008). It is possibly because 'the man of the family' image in Taiwan is stereotyped on both male and female students since young.

Students from a business family have stronger entrepreneurship intentions that those from a non-business family. This result coincides with the finds of Butler and Herring (1991), Chen and Song (2011), Chen and Wu (2007), Cooper and Dunkelberg (1987), Gao (2009), Liao and Weng (2008), Pan and Chao (2006) and Wang and Wong (2004), suggesting that business families provide more accesses to business experience, and this in turn influences children's entrepreneurship intentions.

However, the correlations between part-time work experience and entrepreneurship intentions are statistically insignificant. This result is inconsistent with the related literature. It is possibly because many students of universities of science and technology come from a socially underprivileged group. Instead of paving the way

Table 1. The Chi-square test of different demographic variants students on entrepreneurship intentions.

Variables		Start a business	Employment	Chi-square
Entrepreneurship courses or not	yes	161	296	χ^2=0.485
	%	35.2%	64.8%	
	no	100	205	
	%	32.8%	67.2%	
School attribute	public	12	54	χ^2=8.286***
	%	18.2%	81.8%	
	private	249	447	
	%	35.8%	64.2%	
Academic performance	1/3 up	53	139	χ^2=8.780*
	%	27.6%	72.4%	
	middle1/3	160	302	
	%	34.6%	65.4%	
	1/3 low	48	60	
	%	44.4%	55.6%	
Gender	man	128	159	χ^2=21.889***
	%	44.6%	55.4%	
	female	133	342	
	%	28.0%	72.0%	
Family entrepreneurial experience	yes	78	63	χ^2=34.098***
	%	55.3%	44.7%	
	no	183	438	
	%	29.5%	70.5%	
Part-time work experience	yes	221	427	χ^2=0.042
	%	34.1%	65.9%	
	no	40	74	
	%	35.1%	64.9%	
Grade	Sophomore	122	208	χ^2=1.921
	%	37.0%	63.0%	
	Junior	119	252	
	%	32.1%	67.9%	
	Senior	20	41	
	%	32.8%	67.2%	

*, p<0.05; **, p<0.01; ***, p<0.001.

for entrepreneurship, these students work for a living because up to 85.02% samples need part-time work. However, the true implication of this percentage awaits further investigations.

Next, binary logistic regression was applied to analyze and test the effect of demographic variants on entrepreneurship intentions. As shown in Table 2, the Chi-square test result of the model is 61.372, which means the effect of demographic variants on entrepreneurship intentions is statistically significant. Among these demographic variants, gender (β = 0.609, p<0.001) and business family (β = 1.009, p<0.001) are positively correlated with entrepreneurship intentions. That is to say, male students have stronger entrepreneurship intentions than female students; and students from a business family also have stronger entrepreneurship intentions than students from a non-business family. In contrast, academic performance (β = -0.309, p<0.001) and school attribute (β = -0.721, p<0.001) are negatively correlated with entrepreneurship

Table 2. Binary logistic regression analysis of demographic variants on entrepreneurship intentions.

Variants	Beta
Constant	-0.156
Gender	0.609***
Business family	1.009***
Academic performance	-0.309**
School attribute	-0.721*
Cox and Snell R^2	0.084
Model Chi-square	61.372**
Percent of correct model predication	70.80%

Note: Have entrepreneurship intentions = 1, no entrepreneurship intentions = 2; *male = 1, female = 2; family have business background = 1, family don't have business background = 2; 1/3 up academic performance = 1, middle academic performance = 2, 1/3 low academic performance = 3; public schools = 1, private schools = 2.

intentions. Specifically, students with better academic performance have lower entrepreneurship intentions; and public schools students also have lower entrepreneurship intentions. The interpretation power and prediction accuracy of this model are 0.084 and 70.80% respectively.

DISCUSSION, RESEARCH LIMITATIONS AND FUTURE DIRECTION

The first conclusion of this study is university students in Taiwan that have lower entrepreneurship intentions than those in the USA and China, but are more or less the same as those in the UK. The second is that entrepreneurship intentions do not seem to correlate with the availability of entrepreneurship courses, suggesting that there is much effort for the promotion and development of entrepreneurship education in Taiwan. Additionally, private school students have stronger entrepreneurship intentions than public school students and students with lower academic performance have stronger entrepreneurship intentions than students with better academic performance. This reveals that the lower academic performance of students, the stronger the entrepreneurship intentions in students. Also, male students have stronger entrepreneurship intentions than female students possibly because of the 'man of the family' social value in Chinese culture. Then, students from a business family also have stronger entrepreneurship intentions than students from a non-business family, possibly because of more accesses to entrepreneurship experience and information that provide students with alternative experience and subsequently reinforce their entrepreneurship intentions. Lastly, no significant relations between entrepreneurship intentions and the part-time work experience and the year of study of students are identified.

The results show that entrepreneurship intentions seem uncorrelated with entrepreneurship courses. Okudan and Rzasa (2006) pointed out that, learning models play a decisive role in the success of entrepreneurship education program because entrepreneurship education is learning by doing (Rasmussen and Sorheim, 2006). Therefore, universities are recommended to make reference to the teaching methods of entrepreneurship education of leading overseas universities. For example, case study, practicum, simulation, role playing, team project, onsite enterprise visit, student project and collaborative instruction with field instructors are possible teaching methods to improve the entrepreneurship skills of students (Chang, 2006; Luryi et al., 2007). Also, universities and relevant organizations can establish guidance mechanisms through business plan competitions, industry-academia cooperation centers, innovation and incubation centers, technology transfer/licensing centers and cooperative education to improve curriculum planning, enrich course contents, increase teaching resources, develop teaching methods, obtain and edit practical teaching materials, in order to enhance the entrepreneurship intentions and improve the entrepreneurship skills of university graduates.

This study also discovered that the presence of family members with entrepreneurship experience affects the entrepreneurship intention of students. When providing guidance for students without such a background, universities should emphasize cooperation with business by inviting successful entrepreneurs, alumni with successful entrepreneurship experience or field instructors to share their experience with students. Schools may also arrange practicum or part-time work opportunities for students to learn practical entrepreneurship knowledge and skills. Traditionally, related theories indicate that entrepreneurship education

can enhance the entrepreneurship intention of students and even stimulate entrepreneurship actions. Nonetheless, this study discovered that entrepreneurship education and entrepreneurship intentions do not constitute a cause and effect relation. This indicates that past theories did not put the contents of entrepreneurship education into account, because differences in entrepreneurship education may induce different entrepreneurship intentions. Therefore, practical entrepreneurship courses should be designed for entrepreneurship education in order to solve this problem.

There are a number of limitation in the study. First, although the population should have been all university students in Taiwan, samples of this study were selected from students of marketing- and logistics-management-related departments. Because graduates of these departments are more likely to engage in entrepreneurship, and the effect should be more significant, given that franchise businesses are very popular in Taiwan. Therefore, the research conclusions are acceptable in this respect. Secondly, this study only focused on gender, business family, part-time work experience and academic performance as the demographic variants because personal basic data involve privacy. Also, as Taiwanese society is rather conservative, students rarely discuss the occupations of their parents. Therefore, this study accepts errors in social expectations.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the support of the National Science Council of Taiwan for this research under the project number of NSC 99-2511-S-230-001-MY3, NSC 99-2511-S-346-001-MY3.

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