

ASSESSING THE ENTREPRENEURIAL THINKING LEVELS OF STUDENT ENTERPRISE  
AT HIGHER LEARNING INSTITUTION: A CASE OF FORMER PARTICIPANTS OF  
*PROGRAM SISWANIAGA* UNIVERSITI UTARA MALAYSIA

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**Abstract**

Among the elements that exist in individuals, becoming entrepreneurs are entrepreneurial thinking, entrepreneurial attitude and entrepreneurial skills. Therefore, to develop graduate entrepreneurs, entrepreneurship education and training at higher learning institutions (HLIs) need to embrace students with these three elements. This study focuses on the development of entrepreneurial thinking through entrepreneurship education and training of students at HLIs, namely students' enterprise of Universiti Utara Malaysia (UUM) that had participated in the *Program Siswaniaga* (PS). PS uses a practical approach in giving hands-on entrepreneurial experience to students as a key component of the program. This study has two objectives. The first is to identify the demographic profile of the study sample of the former PS participants. The second is to assess the level of entrepreneurial thinking among former PS participants. The sample consisted of 171 former PS participants that had graduated with Bachelor degree from Universiti Utara Malaysia. The study found that more than half (52 %) of the former PS participants that involved in hands-on business under the PS has choose entrepreneurship as their career choice. Former PS participants showed a high level of entrepreneurial thinking for all dimensions measured in entrepreneurial thinking. The dimensions are opportunities recognition, risk taking, creative and innovative and tolerance of ambiguity. The two dimensions opportunities recognition and risks taking share the highest mean

score of 4.24. Next, dimension tolerance of ambiguity has a mean score of 4.08; follow by the dimension of creative and innovative with a mean score of 4.05. The overall mean scores for the constructs of entrepreneurial thinking is 4.19 with a standard deviation of 0.37. Based on the result of the study the researchers have made several recommendations.

Keywords: entrepreneurial thinking, opportunities recognition, risks taking, creative and Innovative, tolerance of ambiguity, hands-on business

## 1.0 INTRODUCTION

Entrepreneurs have a major impact on economic development of a country. They play an important role in creating a new venture and responsible to innovate and expand existing business. Therefore, there must be an initiative action to develop entrepreneurs, especially graduate entrepreneurs through entrepreneurship education and training at higher learning institutions (HLIs). This is because to create an entrepreneur it is not to just starting an inherited business, but through practice, learning and training obtained formally. Universities have utilized various approaches in offering entrepreneurship education (Armanurah et al. 2006; Armanurah et al. 2009). Recently, greater attention are been given to cultivate various aspects of entrepreneurship attributes to undergraduates by nurturing them with high academic values and entrepreneurial culture (Lily Julienti et al. 2004). Among universities that have given a special focus to nurturing students with entrepreneurial thinking is Universiti Utara Malaysia (UUM). There are diverse entrepreneurship training programs conducted by UUM in order to nurture students with entrepreneurial thinking. Among them is the *Program Siswaniaga* (PS) which is an educational and entrepreneurship training program that uses practical approach in giving hands-on entrepreneurial experience to students as a key component of the program. This study focuses on the development of entrepreneurial thinking through entrepreneurship education and training of students at HLIs, namely students' enterprise of UUM that have participated in the *Program Siswaniaga* (PS). PS uses a practical approach in giving hands-on entrepreneurial experience to students as a key component of the program. This study has two objectives. The first is to identify the demographic profile of the study sample of the former PS participants. The second is to assess the level of entrepreneurial thinking among former PS participants.

## 2.0 PROGRAM SISWANIAGA OF UNIVERSITI UTARA MALAYSIA

PS is among the entrepreneurship program at UUM that focuses on students who are interested in entrepreneurship and voluntarily wish to engage in hands-on business activities at the university. The purpose of PS is to increase the number of entrepreneurs in the country who can contribute productively and effectively for the development of the national economy. Specifically, this program is to provide experience and practical training for students in the field of entrepreneurship. In addition, this program will also foster entrepreneurial talents among students and train them to become independent and committed in performing their business venture. The type of business that

students can pursue under the PS depends on the interest, idea and creativity of the participants themselves as long as it does not go against the regulations enforced by the university.

The types of businesses conducted under the PS are program with premise and program without premise. For the program with premise, participants conduct their businesses at the retail lots provided to them. Businesses among the PS with premise are computer business / cyber, stationery, gifts, clothing, sports equipments, photographs, magazines and books, audio and visual business, food, transportation, laundry, franchise and other business that has current campus market. Among the business activities of PS without premise comprised of sales agents for bus ticket, health products, computers, gifts, and insurance, mobile phones and sports equipments. This study focuses only on the former participants who had engaged in business under the PS with premise. For PS with premise UUM provides new business venture environment in the form of facilities support services to help participants conduct their business on campus. The facilities available include training facilities, business premises facilities, financial assistance, promotion facilities as well as advisory and consultancy services facility. Among the expected outcomes to achieve from students that have attended the PS is to nurture them with entrepreneurial thinking.

### **3.0 ENTREPRENEURIAL THINKING**

Entrepreneurship is a way of thinking, a statement of reasons and actions influenced by opportunities (Timmons & Spinelli, 2004). According to De Bono (2006) to convert ideas into opportunities requires thought and involves time and effort to think. According to him, the main purpose of thinking is to formulate the idea opportunity. The second is to evaluate the benefits of the opportunity. The third is to ensure the feasibility of the opportunity. In this case, a good thought is to reduce the risk of exploration opportunities. Entrepreneurial thinking is the concept of thoughts that are not traditionally structured and straight forward, but is a thought to focus on making a difference from others (Clouse et al., 2003; Higdon 2005; Kuratko 2009).

Those who have the entrepreneurial thinking are able to think at a complex and high level of thinking. Individuals with an entrepreneurial mindset is a person that able to accept the fact that business environment is something that is quite dynamic in which the changes occur in the business environment will create many opportunities and competition as well as product market over an unlimited borderless nation (Che Ani & Mohamad Amin 2002) . This entrepreneurial thinking is in line with global thought expressed by Habrizah (2002) in which she stated that the entrepreneur should have the skills to see the world as an arena to showcase their skills, maximize their success and influence over others. They are always tempted to see things in a broader way, able to adapt to change and manage the company's potential by responding to shock and ambiguity as opportunities for new initiatives, have the personal qualities such as knowledge, analytical, strategic, flexible, sensitive and open.

According to Che Ani and Mohamed Amin (2002), entrepreneurial thinking leads one to entrepreneurial action. Entrepreneurial action is a deed where an entrepreneur will carefully do a research in each project business, make plans based on the facts and the current situation. He will

use all his experiences, sources of supports and advice; provide a formal plan, listing the strengths and weaknesses, as well as able to predict threats and opportunities that exist. The actions always follow planning, evaluate all actions taken, and make corrective action in order to avoid failure.

Based on the concept of entrepreneurial thinking from previous studies and from thinkers in the field of entrepreneurship (Che Ani & Mohamad Amin 2002 2002 Clouse et al. 2003; Timmons & Spinelli 2004, and Higdon 2005; De Bono 2006), almost all of them agree on the elements or dimensions of entrepreneurial thinking. These elements are identifying opportunities, creativity and innovative, risk taking and tolerance of ambiguity.

In seizing opportunities, individuals with an entrepreneurial thinking can identify and seize opportunities, based on their background, experience and relationship (Higdon 2005). Alsos and Kaikkonen asserted that the differences in the process of generating opportunities among entrepreneurs are the situation of entrepreneurs, their experiences and their social networking. Shane stated that entrepreneur identified business opportunities through market knowledge, knowledge of market requirements and knowledge of customer problems. Kuratko & Hodgetts (2004) identified business opportunities from situations and the changes that occur in the environment and then transforming and processing environmental information through entrepreneurial capabilities.

Individuals who have entrepreneurial thinking also have creativity and innovative features. Someone with creative thinking is likely to see the world in a different way than others (De Bono, 2006). Creative individual is an entrepreneur who has ideas, far seeing and able to produce a new and unique product. Innovative-minded individuals are capable to adapt to the environment and change, where they are able to respond flexibly to changes (Norita et al. 2010). Creativity and innovative features can be developed and expanded through appropriate educational programs.

In addition to being able to identify and seize opportunity and have the creativity and innovative abilities, individuals with an entrepreneurial mindset is also a risk taker. Timmons et al. (2004) associate risk with opportunity in which he emphasized that the risk is a reasonable opportunity and a challenge to succeed. Entrepreneurs can manage and identify risks taken so that the risk is reasonable, appropriate, and commensurate with the prospective benefits obtainable. This means they are not wild risk takers but moderate risk that can be anticipated and controlled, and can use it to generate profit (Mohd Salleh et al. 2005; Norita et al. 2010).

Entrepreneurial thinking entrepreneurs also have a high degree of ambiguity and uncertainty, and know how to reduce it (Norita et al., 2010). They are able to think at a high level and complex and has the ability to deal with complex matters and fuzzy effectively (Clouse et al. 2003; Higdon 2005; Kuratko 2009). In addition, they have the skills and mindsets to solve problems associated with risk, plan, organize and utilize resources in a risky and uncertainty situation to seize opportunities (Clouse et al. 2003; Higdon 2005).

#### **4.0 METHODOLOGY**

This study used quantitative approach to observe former PS participants demographic profile and to

assess the level of entrepreneurial thinking among former PS participants. The study population was all UUM's graduates who are former participants of PS from the year 1992 to 2008, with 842 people. While studying at UUM these former PS participants had engaged in hands-on business activities at the PS premise lot for a minimum of one semester and to a maximum of four semesters. During this period, the implementation of PS was virtually the same.

This study used questionnaire design by the researcher as an instrument in collecting the data. The questionnaire consists of all close-ended questions divided into two parts. The first part is about former participant demographic. The second part contains questions two concerning the entrepreneurial thinking of former PS participants. A five-point Likert's scale was used to measure the items for each dimension of the entrepreneurial thinking; namely the dimensions of opportunities (16 items), risk taking (5 items), creativity and innovative (4 items), and tolerance of ambiguity (4 items). These items were measured based on "1" as strongly disagree to "5" as strongly agree.

Data collection for this study was in the year 2009; the researcher used PS former participants that had graduated at bachelor's degree level from the year 2004 to 2008 as a sampling framework. The total number of former participants for that period was 267 people. The researcher had selected a five-year sampling frame for this study because according to Rudzi (2003) a period of five-year after graduation, students could still remember their learning experience that they had gone through in the university. The researcher had circulated 267 questionnaires by post and electronic mail. The total respondents who returned the questionnaires for this study were 173 questionnaires. The researcher found that two respondents had given extreme answers, and removed from the study. Thus, only 171 respondents or questionnaires were valid for furthering the study purpose. The researcher analyzed the information from the questionnaires by using descriptive statistics consisting of frequencies, percentages, means, standard deviations and ranking.

## **5.0 FINDINGS**

In this section the researcher will discuss the results of data analysis that includes the discussion of sample demographic profiles, followed by assessment of the level of entrepreneurial thinking among former PS participants. The researchers used descriptive statistics, which consist of frequency, percentage, rankings, mean and standard deviation to describe the sample demographic profiles and to answer the research questions. Score mean interpretation in Table 4 interpreted the level of entrepreneurial thinking among former participants of PS.

### **5.1 Demographic Profiles of Former Participants of PS**

The sample consisted of 171 former participants of PS who has graduated from UUM at undergraduate level from the year 2004 to 2008. Table 1 shows the demographic profiles of former participant of PS. The genders of former participants were almost the same, 49.7 percent male and 50.3 percent female. The main jobs of the respondent's father were salaried jobs (42.1%), followed by self-employed (40.4%) and others (17.5%). The majority of respondents have mother who

worked as housewife (62 %), followed by wage earner (22.2 %), self-employed (14 %) and others (0.6 %). The majority of respondents (69.6 %) had close relatives who own their business. The father of respondents who operated their own business was 37.4 percent, followed by their mother 29.2 percent and (grandfather / grandmother) with 22.2 percent. More than half, 54.4 percent of the respondents had at least one member of their immediate family (mother / father / grandfather / grandmother) involved in business activities.

In term of educational background of formal PS participants, more than half (69%) were business majors at the undergraduate level. While 28.7 percent were non-business majors. More than half (57.9 %) of former PS participants had a cumulative grade point average (CGPA) of 2.00 to 2.99, 3.00 to 3:49 at (39.2 %) and 3.50 and above (2.9 %). As for their career choice, 51.5 percent of the respondents chosen to become entrepreneur and the remaining 48.5 percent of the respondents had not yet become entrepreneurs.

**Table 1 Demographic Profile of Former Participants of PS**

Demographic factors	Category	Frequency	Percent
Gender	Male	85	49.7
	Women	86	50.3
The main jobs of father	Salary job	72	42.1
	Self-employed	69	40.4
	Others	30	17.5
The main jobs of Mother	Salary job	38	22.2
	Self-employed	24	14.0
	Housewife	106	62.0
	Others	1	0.6
	Unspecified	2	1.2
Background family running own business entity	Mother	50	29.2
	Father	64	37.4
	Grand Parents	38	22.2
	Closest relatives	119	69.6
Field of Study at UUM (Bachelor's degree)	Business Majors	118	69.0
	Non Business Majors	49	28.7
	Not Specified	4	2.3
Cumulative Grade Point Average (CGPA)	2.00 to 2.49	17	9.9
	2.50 to 2.99	82	48.0
	3.00 to a 3.49	67	39.2
	3.50 an above	5	2.9
Career	entrepreneur	88	51.5
	Non-entrepreneur	83	48.5

### The Level of Entrepreneurial Thinking

Interpretation of mean scores as shown in Table 2 is to determine the level of entrepreneurial thinking among former participants of PS. The researcher divided mean scores for the entrepreneurial thinking into four levels, namely low, medium low, medium high and high.

**Table 2 Mean Score Interpretation**

Mean Score	Mean Score Interpretation
1.00 – 2.00	Low
2.01 – 3.00	Medium Low
3.01 – 4.00	Medium High
4.01 – 5.00	High

Source: Norasmah Othman 2002; pp. 202.

To measure the level of entrepreneurial thinking in this study, 29 items consisted of four dimensions were used. These dimensions are identifying opportunities (16 items), risk taking (five items), creative and innovative (four items), and tolerance of ambiguity (4 items). Table 5 shows the detailed analysis on the level of entrepreneurial thinking among former participants of PS.

Table 3 indicates that the overall mean score of entrepreneurial thinking among former participants after attending the PS is 4.19 with a standard deviation of 0.37 (n = 171). The entrepreneurial thinking level among former participants that joined the PS is high. Former PS participants have the highest level of entrepreneurial thinking for two dimensions; namely identifying opportunities and risks taking, both with a mean score 4.24. Following it, is the dimension tolerance of ambiguity with a mean score of 4.08 and dimension creative and innovative with a mean score 4.05. The mean score level for both, dimension of tolerance of ambiguity and dimension of creative and innovative are also high. Of the 29 items that measured the construct of entrepreneurial thinking, item number 12, in the dimension of identifying opportunities shows the highest mean score of 4.38. The item referring to is 'I feel overwhelm when thinking of new ideas for stimulating business'. The majority of the items that have high mean scores are in the dimension of identifying opportunities. The item with the lowest mean score was item number 3 in dimensions of creative and innovative; it has a mean score moderately high at 3.94. All items in dimension of identifying opportunities and dimension of risk taking are at a high level. However, there is one item (item number 1) in dimension of tolerance of ambiguity and two items (item number 3 and 4) in dimension of creative and innovative have moderately high mean score. Table 3 displays detailed information about the means scores, ranking and the level of mean score for each item and dimension of the construct of entrepreneurial thinking.

**Table 3 Mean scores, Ranking Mean, Standard Deviation and Interpretation of Mean Score for Entrepreneurial Thinking**

Aspects of Entrepreneurial Thinking	Mean Score	Mean Ranking	Standard deviation	Interpretation of Mean Score
<b>Dimensions of Identifying Opportunities</b>				
1. I believe that business idea have relationship with the needs of the community.	4.36	2	.551	High
2. I like to find ideas that can transform to business opportunities.	4.29	8	.549	High
3. I like to follow the changes in community lifestyle.	4.10	23	.708	High
4. I believe all the problems of society are a business opportunity.	4.28	9	.644	High
5. I like to find business opportunities that excel my interest.	4.28	10	.616	High
6. I like to think of new products that can give benefits to consumers.	4.32	5	.570	High
7. I like to find problems of students need while studying at UUM.	4.16	17	.627	High
8. I always analyze the benefits of business opportunities that I identify.	4.10	24	.629	High
9. I prefer to do something that fits me.	4.13	22	.610	High
10. I feel happy when I find good solutions to unsolved problem by other people.	4.32	3	.517	High
11. I believe that to be successful, a company must employ business practices that might see at a glance extraordinary.	4.20	14	.570	High
12. I feel overwhelm when thinking of new ideas to stimulate business.	4.38	1	.533	High
13. I often approach business opportunities in a unique way.	4.14	20	.615	High
14. I feel good to be a catalyst for change in business matters.	4.27	12	.552	High
15. I feel good when doing something new in my business.	4.32	4	.529	High



16. I often think of new ideas when I am relaxed.	4.22	13	.637	High
<b>Total Items = 16</b>	<b>4.24</b>	<b>1</b>		<b>High</b>
<b>Dimensions of Risk Taking</b>				
1. I believe it is important to calculate risks before starting a business.	4.19	16	.628	High
2. I love to do business with the risk that I can manage.	4.15	19	.591	High
3. I believe someone will get many entrepreneurial opportunities if he dares to take risks.	4.27	11	.614	High
4. I feel satisfied when successfully take risks to earning profit.	4.29	7	.548	High
5. I believe that to advance in business one must be willing to take risks.	4.29	6	.599	High
<b>Total Items = 5</b>	<b>4.24</b>	<b>1</b>		<b>High</b>
<b>Dimensions of Tolerance of Ambiguity</b>				
1. I believe I have made the best decision although there is a conflict of information.	3.98	28	.628	Medium High
2. I like to refer to the latest information in decision making, even though I am not sure of the source.	4.04	26	.668	High
3. I enjoy working in an environment that is constantly changing.	4.13	21	.629	High
4. I can manage a condition that occurs because of the changing environment.	4.15	18	.532	High
<b>Total items = 4</b>	<b>4.08</b>	<b>3</b>		<b>High</b>
<b>Dimensions of Creative and Innovative</b>				
1. I often generate some business ideas at a time.	4.20	15	.549	High
2. I often perform tasks in a unique way.	4.06	25	.567	High
3. I can solve problems with vague information	3.94	29	.772	Medium High
4. I often get the job done well without been given guidance on how to do it.	3.98	27	.655	Medium High
<b>Total Items = 4</b>	<b>4.05</b>	<b>4</b>		<b>High</b>
<b>Overall number of items = 29</b>	<b>4.19</b>		<b>0.37</b>	<b>High</b>

## 6.0 DISCUSSION AND CONCLUSION

Among the key material needed to become an entrepreneur is the entrepreneurial thinking. The study found that more than half of the former participants who had involved in a hands-on business under the PS had chosen entrepreneurship as their career choice. The study also found that students who had the opportunity to perform hands-on business under the PS showed a high level of entrepreneurial thinking for all entrepreneurial thinking dimensions; that is identifying opportunities, risk taking, creative and innovative and tolerance of ambiguity. Therefore, in order to produce students that graduated with entrepreneurial thinking and create more highly educated entrepreneurs (Norita et al. 2010); one of the aspects that entrepreneurship training and programs at HLI must have is to provide opportunities for students to practice hands-on business during their studies. Among dimensional aspects to be considered that can cultivate the minds of students to the direction of entrepreneurial thinking are identifying opportunities, risk taking, tolerance of ambiguity and also creative and innovative. According to De Bono (2006), thinking aspect is a skill that can improve through training, practicing and learning. Entrepreneurship education and training have the ability to develop potential students towards a more creative and innovative individuals, and helping them in identifying and seize opportunities from the environment. Besides that entrepreneurship education are able to teach students to translate new ideas into reality or economic activities, as well as sustaining in business venture and be sensitive to change and uncertainty (Yap Poh Moi, 2002). Therefore, HLI needs to provide a structured and planned entrepreneurship education programs that include hands-on business elements where students involved directly in business at the university. This is because university students have great entrepreneurial potentials and therefore the university needs to identify a comprehensive methodology to develop these potentials (Louis, 1993). The involvement of students in hands-on business activities at the university not only develop the entrepreneurial thinking of students to a higher level, but also raise their tendency, interests and entrepreneurial career aspirations in realizing entrepreneurship career as their priority choice.

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