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The Effect of Entrepreneurship Education on Entrepreneurial Competencies

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Abstract: An assessment of the impact of entrepreneurship education at the level of educational institutions can help determine the degree to which it has accomplished its objectives and has justified the resources committed to it. This research focuses on the effect of entrepreneurship education provided by one of the largest and fast growing higher education institution in Malaysia. Two thousand two hundred and thirty nine students and 2007 graduates successfully completed the survey questionnaires and all of them were used in the data analysis. Based on the quantitative analysis of all items included in the questionnaire, a large number of standard tables have been prepared. The variables that are included in the dataset are tabulated against respondents' type, gender and program clusters. Alumni score higher on all the 12 dimensions of entrepreneurial competencies used in this study. Students assess their personal entrepreneurial characteristics such as risk propensity, self-efficacy, need for achievement and structural behavior higher than those of alumni. They also scored high on entrepreneurship skills, such as creativity, analysis, motivation, networking and adaptability. Finally, the students indicate that they have more knowledge of entrepreneurship but less knowledge on the role of entrepreneurs in a society. The findings help to reflect the depth of seriousness in instilling entrepreneurial mindset among students via vibrant role of respective stakeholders. In this vein, innovative entrepreneurship education model is timely and that requires a strong research initiative.

Keywords: Entrepreneurship Education, Competencies, Attitude, Skills, Knowledge, Higher Education Institutions, Malaysia.

1. INTRODUCTION

The 2016 Legatum Prosperity Index, published by The Legatum Institute, London, assessed 149 countries and ranked Malaysia as the world's 38th most prosperous nation based on variables that were grouped into eight sub-indices. Malaysia was ranked 16th in the sub-index of Entrepreneurship and Opportunity. Similarly,

Malaysia is currently ranked 23rd in the World Bank's *Doing Business Report 2017* (DB 2017). However Malaysia aims to be listed among the top 10 in the World Bank's report within the next several years. Although Malaysia is not perfectly driven by ranking reports, but it enables Malaysia to gauge the effectiveness of various developmental policies and strategies in comparison with other nations while realigning the mismatched development strategies to fulfill the aspiration of becoming one of the leading developed countries by the year 2020. Entrepreneurs' development is an important determining factor in the nation's efforts to transform the country, as such the higher education institutions (HEIs) been targeted to strive to enhance their capacity to supply the required human capitals needed via vibrant entrepreneur education programme that meets the local and global expectations.

Enhancing the quality of human capital and equipping the nation with entrepreneurial capabilities as well as developing entrepreneurs who are independent, resilient and competitive are some of the main strategies that the Malaysian government has initiated during the last four decades (11th Malaysia Plan, 2015). Besides, entrepreneurship is vital in reducing the wealth disparity among various ethnic groups in Malaysia while supporting the socio-economic drive. The inculcation of entrepreneurial values coupled with changing mind-sets towards a view of self-employment as a viable alternative to salaried employment helps in addressing the issue of increase in the number of unemployed graduates, who failed to move along with industrialization challenges, and more significantly entrepreneurial values reduce extensive dependent on government and private sector organizations to create job opportunities (Firdaus *et al.*, 2009). Concentrating on the role of education in creating positive attitudes toward entrepreneurship and inculcating entrepreneurial capabilities among the students, through developing effective and purposeful entrepreneurship programmes and courses, were other important strategies developed by the Malaysian government (Cheng, Chan and Mahmood, 2009; Fauziah, Rohaizat and Siti Haslinah, 2004). As a result, in less than two decades, entrepreneurship education has grown all over the country and implementing entrepreneurship development programmes have recently become compulsory for HEIs. In the National Higher Education Action Plan, it has been clearly declared that entrepreneurship as a critical agenda. Indeed, Ministry of Higher Education (MOHE) has launched the Policy on Entrepreneurship Development on 13 April 2010 to promote strategic and holistic entrepreneurship development in Malaysian HEIs. Indeed, the importance of education for entrepreneurship or enterprising behavior has been widely acknowledged all over the world as a key to building the entrepreneurial culture.

Better knowledge about the effects of entrepreneurship education is one of the things that HEIs must constantly look for. However, so far there are only a limited number of studies carried out in Malaysia and indeed many established studies on entrepreneurship are often from the Western countries. Despite lack of evidence on the effects of entrepreneurship education in Malaysia, the key role of entrepreneurship education must not be disregarded. It is critical to equip young people with the skills to survive as Malaysia aggressively plans to become a high income economy by the year 2020. Entrepreneurship education is a means to increase social inclusion; it can increase the number of entrepreneurs – social and commercial, and it can be a gateway for a greater integration of the framework for key competencies for lifelong learning. Therefore, it is timely to assess the effectiveness of the current entrepreneurship education system and to revise guidelines to promote advanced entrepreneurship education. In line with this aim, fostering quality entrepreneurship education and innovative entrepreneurship performance is generally considered an attractive means of goal achievement in any HEIs. The research aimed to explore the extent to which entrepreneurship education has a positive effects on the entrepreneurship key competencies of students and recent graduates.

2. REVIEW OF LITERATURE

2.1 Entrepreneurship Competencies

Competencies of the entrepreneur have been known to be one of the most important factors significantly related to the success of a venture. The term *competency* refers to an individual's capability to perform a task adequately or proficiently. Gibb (2005, 2010) articulated competence as an ability to perform certain tasks for which knowledge, skills, attitudes and motivations are necessary. According to Boyatzis (1982: p. 21)

“a job competency is an underlying characteristic of a person in that it may be a motive, trait, skill, and aspect of one's self-image or social role, or a body of knowledge which he or she uses”.

Bird (1995) has suggested that an entrepreneurial skill contribute to venture performance and growth. Entrepreneurs who have the necessary competencies required for the business are more likely to be successful. It is clear that researchers assume that entrepreneurs have different personality traits compared to other people. Moreover, this concept has received more attention from the academic research community (Mueller and Anderson, 2014; Owens, 2003). Lee and Tsang (2001) argue that in the field of entrepreneurship, studies of the psychological characteristics of entrepreneurs outnumber most other topics.

The earliest work in the field of entrepreneurship also has focused on personal characteristics that have successfully distinguished entrepreneurs from non-entrepreneurs (Ramana, Aryasri, and Nagayya, 2008). Mischel and Shoda (1998) demonstrate that personality characteristics are useful in explaining the generation of behavior. In other words, the power of personality characteristics to predict a particular behaviour is dependent upon the fit between these personality characteristics and the environment, in which the behaviour is shown. Zain, Akram and Ghani (2010) researched on the undergraduate business programme students in Malaysia and revealed that more graduating students showed a strong desire to pursue into entrepreneurship. The graduates are influenced by their entrepreneurial courses, family members who are entrepreneurs and academics that are in business related disciplines. Besides, the findings also support that personality trait influence intention. That is the manner in which a person thinks and behaves influences their decision to become an entrepreneur. Therefore, it is proposed that study on entrepreneurship to use personality characteristics, which have face validity for the specific entrepreneurial task and work situation (Utsch and Rauch, 2000). Bartlett and Ghoshal (1997) identified three categories of competencies, namely attitude/traits, knowledge/experience, and skills/abilities. These three categories of competencies are used to measure the level of entrepreneurial competencies among the students and graduates. Hence, knowing the competencies the students and graduates learned and experience will help identify the extent them becoming entrepreneurs. The following sub-sections highlight relevant literature pertaining to entrepreneurship competencies.

2.2 Attitude

One of the three dimensions of the entrepreneurship key competencies used in this study is attitudes that simply signify the extent one learn to become an entrepreneur. This dimension deals with the need for individuals to develop certain attitudes that will help them to take action, including taking responsibility for their own learning, careers and life. Sony and Iman (2005) through their research stressed that entrepreneurial learning leads to a healthier formation of entrepreneurial competencies. Accordingly, one of the focuses

of entrepreneurship education is to improve students' entrepreneurial attitude orientation and enhance their awareness toward entrepreneurship as an alternative career choice (Anderson and Jack, 2008; Florin, Karri and Rossiter, 2007; Martin, McNally and Kay, 2013; Robinson *et al.*, 1991). There is empirical evidence that supports the claims that entrepreneurial attitude influences students' intention towards being self-employed (Sharrif and Saud, 2009; Harris and Gibson, 2008; Kundu and Rani, 2007). Meanwhile, other studies found the reverse; entrepreneurship education is ineffective in increasing students' ambition to become entrepreneurs (Oosterbeek, Praag and Ijsselstein, 2010; Fuchs, Werner and Wallau, 2008). Previous researchers have looked at entrepreneurial behavior all the way through attitudinal standpoint which embrace the assumption that entrepreneurial attitude is a more consistent measure of entrepreneurial behaviour that can be enhanced by interventions from surroundings (Robinson *et al.*, 1991; Ajzen, 2002; Sesen, 2013). However, the term attitude has a very broad meaning and therefore more insight is needed in the relevant components determining the attitude. Many studies have focused on the attitude of successful entrepreneurs. In the study conducted by European Commission (2012) four components was distinguished through factor and reliability analysis: risk propensity, self-efficacy, need for achievement and structural behaviour. These components of attitudes have been used in the present study. Following discussion will focus on attitude components.

2.2.1 Risk taking propensity

According to the psychological school of thought originated by Cunningham and Lischeron (1991), risk taking is the key factor in distinguishing entrepreneurs from managers. Frank, Lueger, and Korunka (2007), concluded based on their observation of previous empirical findings, entrepreneurs with medium level of risk tendency can be characterized in ideal conditions, and their uniqueness is always higher than those of managers. Risk taking, both personal and financial, has traditionally been considered a defining characteristic of entrepreneurial activity (Sesen 2013; Timmons, 1994). According to Owens (2003), a considerable amount of literature has been published on the significant relationship between risk tolerance and entrepreneurship. In their research work, Stewart and Roth (2001) have examined the studies of risk taking and concluded that risk-tolerant individuals are likely to choose entrepreneurial careers, whereas risk-averse individuals are likely to choose organizational employment. Among others, Lumpkin and Dess (1996) assume a relationship of risk taking with success. Rauch and Frese (2007) commented that although risk propensity is one of the dominant themes in entrepreneurship literature, agreement on the risk propensity of entrepreneurs is far from unanimous. Rauch and Frese (2007) have noted that there is little and inconsistent empirical evidence to prove that relationship between entrepreneurs and non-entrepreneurs in their risk-taking propensity. The literature delineates that successful owners have probably taken into consideration calculated risks (Begley and Boyd, 1987). While taking calculated risks would largely reduce the probability of failure in the undertaken endeavour, a commonly positive perception towards risk taking is mandatory in an environment where risks are by any chance inevitable. In addition, it is emphasized that a positive perception of risk taking will help the owner of the company to take on unavoidable (and often sought for) challenges and risks in building up success (Krauss *et al.*, 2005; Patricia *et al.* 2016). Entrepreneurs have always been considered as risk taking individuals in the literature of entrepreneurship (Kotey, 2006; Scott, 2003). Risk propensity is an attitudinal component that refers to an individual's tendency to take risks in his/her actions that varies across distinct decision context. Thus, this individual psychological trait continues to be discussed as an important variable for understanding entrepreneurial behavior (Patricia *et al.*, 2016)

2.2.2 The need for achievement

McClelland (1961, 1985), have examined a number of needs that an individual has been thought to acquire as he or she develops. The research focused on the behavioural outcomes of specific needs, and highlighted that the most widely studied needs is the need for achievement, and that high-need for achievement people usually are growth oriented and more likely to succeed. It is argued that entrepreneurs must persistently aim at working on their goals, continuously enhance their performance, take the responsibility for the results of their work, and cope with challenging tasks (Begley and Boyd, 1987; McClelland, 1987). Following McClelland's work, which links achievement motivation to entrepreneurship, many studies have confirmed that the need for achievement is largely accepted as major traits of entrepreneurs (Malebana, 2014; Johnson, 1990). Meanwhile, Owens (2003) believes that individuals with high need for achievement normally have a propensity to situate critical aims and wish to make brilliance for themselves. This perspective is supported by Krauss *et al.* (2005) who, in their review of individual characteristics, pointed out that the performance of individuals who have had high-need for achievement with no routine jobs is much better compared with others, apart from the fact that they have the responsibility for their own performances. Many studies have shown that entrepreneurs generally have a higher need to achieve than non-entrepreneurs (Collins *et al.*, 2004; Frank, Lueger, and Korunka, 2007).

2.2.3 Self-Efficacy

Self-efficacy or self-belief, self-assurance, self-awareness and feelings of empowerment describes individuals' self-perceptions of their skills and abilities. This concept reflects an individual's innermost thoughts on whether they have the abilities perceived as important to task performance, as well as the belief that they will be able to effectively convert those skills into a chosen outcome (Bandura, 1997). Self-efficacy has gained momentum in the entrepreneurship literature as a crucial personal attribute of people who recognize and exploit opportunities. De Noble, Jung and Ehrlich (1999) have identified six dimensions for entrepreneurial self-efficacy which include coping with challenges, developing new product and market opportunities, building an innovative environment, initiating relationship, defining purposes, and developing critical human resources.

Chen, Greene and Crick (1998) have operationalized entrepreneurial self-efficacy as self-assessed "certainty" in dealing with 26 specific tasks identified from prior literature and interviews with several local entrepreneurs concerning key entrepreneurial roles. Their findings showed that among students, overall entrepreneurial self-efficacy was significantly correlated with the stated intention to start a business. Besides, Kickul, Wilson, and Marlino (2004) have found that entrepreneurial self-efficacy had a stronger effect on a choice to be self-employed. Othman, Ghazali and Sung (2006) have found that there is a small difference in terms of personality traits including self-efficacy between the graduate and non-graduate entrepreneurs in urban Malaysia.

It is also well supported by others that individuals with higher entrepreneurial self-efficacy have higher entrepreneurial intentions person likelihood to become an entrepreneur (Chen, Greene and Crick, 1998, DeNoble *et al.*, 1999; Kickul *et al.*, 2009; McGee, Peterson, Mueller and Sequeira, 2009; Wang, Wong, and Lu, 2002). Entrepreneurs always been seen holding a high level of self-efficacy than non-entrepreneurs. Thus, high level of entrepreneurial self-efficacy could modify a person's belief in his or her capabilities in completing the tasks required to successfully initiate and establish a new business venture will minimal dependency on others. This demonstrates the potential of entrepreneurial self-efficacy as a distinct characteristic of the entrepreneur.

2.2.4 Structural behaviour

Structural behaviour is defined as both the ability to work in a structured manner and the ability to persevere whenever faced with setbacks and obstacles (perseverance). Perseverance helps entrepreneurs to maintain a high level of endurance and to overcome snags and setbacks in their business (McGrath, 1999; Stoltz, 1997). The perceived ability which encompasses self-discipline, mental focus, stress resistance and inner balance to overcome adverse circumstances in new ventures together with substantial level of self-efficacy is strongly believed to strengthen entrepreneurs' conviction that they can succeed (Bandura, 1997).

2.3 Skills

Skills practically explain to one on how to become an entrepreneur. One of the main purposes of entrepreneurship education at a higher education level should be to develop entrepreneurial skills and mindsets. Research shows that it is important to capture a mindset and attitudinal approach rather than a set of personality traits. It is possible to teach students in higher education 'how to' be entrepreneurial by helping them to develop the entrepreneurial skills that are needed to turn ideas into action (EIM, 2012). Skill is a "know-act", which is based on "know-mobilization" and a "know-integrate". Skills development is, therefore, seen as a dynamic and integrative process. Improving the skills that entrepreneurs need such as writing business plans, securing funding from venture capitalists, and understanding accounting and supply chain management and so forth help to prepare students in venture in new business. By learning success factors and start-up failures in the entrepreneurship courses, students can avoid mistakes and achieve success out in the business world sooner. Skills are the second of three elements that make up the entrepreneurship key competence measured in this study. The skills components used in this study are creativity, analysis, motivation and adaptability.

2.3.1 Creativity

Creativity is considered to be crucial for all disciplines of work and organizations and thus the concept has been studied in a wide array of disciplines such as economics, cognitive science, development research, pedagogy and history (Runco, 2004). Despite several definitions of the concept flourish in the literature, creativity could be understood as

“a combination of novelty and appropriateness and has been associated with problem-solving and novelty generation as well as with reactive and adaptive behaviour that allows people to cope up with turbulent environments” (Berglund and Wennberg, 2006: p.368).

Creativity becomes an important impetus for businesses that strive for continuous innovations.

Innovation is a continuum that spans from the incremental improvements, new to a firm to a radical invention, new to a global market (Oksanen and Rilla, 2009). As such Baumol (2004) defines entrepreneur as an innovator who is always engaged in doing something that was never done previously, and not just founding another business entity of a sort that already exists. On the other hand Lau (2002) describe entrepreneurs as individuals who take risks and invest resources to make something new, design a new way of making something already existing, or create new markets. Indeed, entrepreneurship and innovative business behaviour have long been associated with creativity and the two are often used interchangeably (Berglund and Wennberg, 2006). Moreover, Matthews (2007) asserted that the link between creativity and

entrepreneurship was long established with conceptual and empirical support. Research studies have indicated encouraging association between creativity and entrepreneurial intentions (Berglund et. al (2008, Zampetakis, 2008, Sesen, 2013; Patricia *et al.* 2016). Today, creativity can be found as an essential element not only in entrepreneurship but also for technopreneurship development.

2.3.2 Analytical skills

A critical skill in making decisions is to analyse problems and to separate main and side issues. The analytical ability enables individuals to seek opportunities, to invent and to plan. The entrepreneurial decision-making skills are considered important because the entrepreneur must be able to make decisions that influence the course of business. The ability to analyse means that the entrepreneur is able to carefully weigh the advantages and disadvantages, to recognise patterns and consequences, to recognise constraints and to think about alternatives (Bird,1995; EIM, 2012; Scott, 2003).

2.3.3 Motivation

It is important that entrepreneurs have a strong sense of their business goal since identifying and advocating for the goal allows them to motivate others and gain their support. The ability to motivate others is important in order to gain support and assistance in realising opportunities. Motivation means encouraging and coaching people in achieving their goals. Successful entrepreneurs have a lot of advice and experience to share. Thus they have the capability to inspire others to pursue their true passions and make a living doing what they love. Motivation not only refers to people within the internal environment (eg. employees) but also generally to people in the external environment. The quality entrepreneurs displayed above others are persuasion or the ability to convince others to change the way they think the best to work.

2.3.4 Networking

Networking is a socio-economic activity by which groups of people recognize, create, or act upon opportunities. Networking is about creating and maintaining contacts with people outside which are part of factors contributing to entrepreneurial success (Duchesneau and Gartner 1990). The ability to network is one of the most crucial skills any entrepreneur can have. Networking is a structured plan to get to know people who are within the businesses for mutual benefits. Several studies (Birley 2002, Gibb, 2010; Hoang and Antoncic, 2003; Shane, 2003; Bosma *et al.*, 2008) have indicated that the contact with successful entrepreneurs and strong networks of support as influencing factors to enhance the perceptions of their own capabilities.

2.4 Knowledge

The third of the three elements that make up the entrepreneurship key competence is knowledge and; to learn to understand entrepreneurship. Knowledge is defined as having a broad understanding and knowledge of entrepreneurship, including the role entrepreneurs and entrepreneurship plays in modern economies and societies. The research in entrepreneur began with the personality traits approach. The personality traits approach assumes that there are distinct traits and motives that distinguish entrepreneurs from non-entrepreneurs, and successful entrepreneurs from unsuccessful entrepreneurs. Most entrepreneurial experts endorse the idea that education and entrepreneurship contribute to economic development since they play

significant role. The aim in teaching entrepreneurship is to integrate relevant competencies which are close to the real life of entrepreneurs and their ventures (Rae 1999, Jack and Anderson 1999).

It is common to see debates among scholars and practitioners on the issues whether the characteristics of entrepreneurs could be taught or learned because they are innate. However, at the present time, the recognition of entrepreneurship as a discipline help to clarify the issues and further support the claims that some entrepreneurship traits could be taught, learned and developed, especially early in life, and further honed throughout an entrepreneur's career (Davidsson, 2008, Kuratko, 2005). Long ago, the management guru, Drucker (1993: 3) stated that "most of what you hear about entrepreneurship is all wrong. It is not magic; it is not mysterious; and it has nothing to do with genes. It is a discipline and, like any discipline, it can be learned." To this juncture we could safely assume that entrepreneurs are not always born but they also could be made. Thus it is crucial to encourage entrepreneurship, through entrepreneurial culture, and education. Education can help shape an entrepreneurial culture, while the culture can help to increase the effectiveness of entrepreneurship educational initiatives. It is also important to recognize that the entrepreneurial competencies is solely depends on the individual factor such as knowledge, skills and personality characteristics which can be stimulated and trained at the HEIs. According to Hayton and Kelly (2006) individual competencies influenced through application of knowledge to achieve a given outcome. Then, the individual skills become a crucial factor in implementing the knowledge. Consequently, the personality characteristics are required to motivate the implementation of the knowledge and skills in achieving a desired outcome. In short, entrepreneurship education would generate more and better entrepreneurs and increase the chances of obtaining entrepreneurial success than in the past (Bjerke, 2007).

3. METHODOLOGY

Since the purpose of this study was to collect data from a large sample to establish a measurable effects of entrepreneurship education, therefore quantitative approach was considered more suitable. A descriptive study was undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in this study of a large institution in Malaysia (for the purpose of anonymity the actual name of the institute is not mentioned). The population of this study consists of more than ten thousand for each group of respondents, students and alumni; thus the researchers decided to get 2500 samples from each group. This decision made to fulfill the aspiration to receive at least a total response of 15% to 20% for each of the students and alumni group. Perhaps the decision on total sample was also influenced and encouraged by the availability of funding from the Ministry of Higher Education, Malaysia.

This study utilized relevant self-report survey instrument that was obtained from the research report which was prepared in 2012 for the European Commission-Directorate-General for Enterprise and Industry by EIM Business and Policy Research (the Netherlands).

The items was rated on a 5-point Likert scale as in the original instrument with responses ranging from 1 (strongly disagree) to 5 (strongly agree). In summary, all the reliability coefficients (Cronbach Alpha) were above 0.7 and within the acceptable range (Hair, Anderson, Tatham and Black, 1998). Enumerators was used to collect data from the respective group of respondents. A total of 2232 and 2007 usable questionnaires for each of the set of respondents, students and alumni were received. Standard tables have been prepared, where the variables that are included in the dataset are tabulated against a limited number of control variables: by gender and program clusters (ST-Science and Technology; SSH-Social Sciences and Humanities; and MB-Management and Business).

4. FINDINGS

4.1 Attitudes

Several statements which refer to the entrepreneurship attitude was presented to the student and alumni respondents. Average scores were computed for each of these components: risk propensity, self-efficacy, need for achievement and structural behaviour. Both group of respondents were asked whether ‘the entrepreneurship education had helped them to develop their sense of initiative - a sort of entrepreneurial attitude’ as a first indication of attitude towards entrepreneurship. Alumni respondents ($M = 3.66$, $SD = .814$) judge their education to be more helpful to develop their sense of initiative than student respondents ($M = 2.86$, $SD = .818$). Attending entrepreneurial courses can be a logical reason. There was a significant difference in responses by gender ($F = 8.079$, $p = .005$), and program clusters ($F = 5.981$, $p = .003$) for alumni sample. Male alumni scored ($M = 3.71$, $SD = .823$) the role of the institution in developing a sense of initiative higher than female alumni (Mean = 3.60, $SD = .803$). The mean difference for alumni by program clusters are, $-ST$ ($M = 3.63$, $SD = .840$), SSH ($M = 3.53$, $SD = .829$), MB ($M = 3.71$, $SD = .787$) ($F = 5.981$, $p = .003$) respectively. The Post-hoc tests (Table 1) shows that SSH and MB are significantly different ($p = .004$) in terms of attitude development. However, the other program cluster comparisons are not significantly different from one another. There was no significant difference in the mean score for student data for gender ($F = .067$, $p = .795$) and program clusters ($F = .310$, $p = .733$).

Table 1
Post Hoc Tests : Program Cluster and the Attitude Development of Alumni

<i>Multiple Comparisons</i>						
<i>Dependent Variable: This institution helped me to develop my sense of initiative – a sort of entrepreneurial attitude</i>						
<i>Tukey HSD</i>						
					<i>95% Confidence Interval</i>	
<i>(I) Cactegory</i>	<i>(J) Cactegory</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>Lower Bound</i>	<i>Upper Bound</i>
<i>ST</i>	<i>SSH</i>	.097	.058	.220	-.04	.23
	<i>MB</i>	-.084	.039	.082	-.18	.01
<i>SSH</i>	<i>ST</i>	-.097	.058	.220	-.23	.04
	<i>MB</i>	-.181*	.056	.004	-.31	-.05
<i>MB</i>	<i>ST</i>	.084	.039	.082	-.01	.18
	<i>SSH</i>	.181*	.056	.004	.05	.31

*. The mean difference is significant at the 0.05 level.

The following sub-sections presented the findings of entrepreneurship competence- attitude components (risk propensity, need for achievement, self-efficacy, and structural behavior) for both sets of data, students and alumni.

4.1.1 Risk propensity

The risk propensity of students and alumni is presented in Tables 2, 3, and 4. Alumni respondents scored themselves significantly higher on risk propensity than student sample who have attended foundation

courses on entrepreneurship. This reflects that on an average the alumni are willing to take slightly high risks ($M = 14.28$, $SD = 2.218$) than the current students ($M = 14.00$, $SD = 1.921$) who are more likely to exhibit risk-averse behavior. Female alumni scored low on risk propensity ($M = 14.19$) than male alumni ($M = 14.36$). Male students show the lowest score on risk propensity ($M = 13.99$). Male alumni have the highest risk propensity among both the samples of the study. There were no significant differences in risk propensity when compared for gender and program clusters for both sets of sample.

4.1.2 The need for achievement

Students give themselves slightly higher score for the dimension 'need for achievement' than alumni respondents. Female students have a slightly higher need for achievement ($M = 7.89$) than male students ($M = 7.58$). There are no significant differences between male and female alumni. The need for achievement seems to decrease as one graduated from the institution. It is likely that alumni have less urge to prove themselves and this is likely to decline as they move further and gain experiences in their career path. There are significant differences between the program clusters for student and alumni respondents. The Post-hoc tests (Table: 5) shows that *ST* and *MB* are significantly different ($p = .005$) in terms of need for achievement of students. Similarly, the Post-hoc tests results (Table 6) indicated that *ST* and *MB* are significantly different ($p = 0.001$) in terms of need for achievement of Alumni. However, the other program cluster comparisons are not significantly different from one another for both students and alumni respondents.

4.1.3 Self-efficacy

The level of self-efficacy is somewhat high for both students and alumni respondents. However, it is noticed that there are alumni differences regarding self-efficacy based on program clusters. The Post-hoc tests (Table 6) shows that *ST* and *MB* are significantly different in terms of self-efficacy ($p=0.007$). However, the *SSH* program cluster comparisons are not significantly different from one another. The findings indicate that in general current students and graduates have high perceptions on all the items related to entrepreneurial self-efficacy. Both the group of respondents in this study has taken the basic entrepreneurship courses as a part of their bachelor's degree program requirements. With high entrepreneurial self-efficacy, the respondents of this study are anticipated to have some sort of interest, motivation, and capability to get engaged in entrepreneurial activities and prepared to face the challenges ahead in the process of venture creation. The same has been alluded in previous studies that those who have strong entrepreneurial self-efficacy have shown high intention to start a business (Chen, Greene and Crick, 1998; De Noble. 1999).

4.1.4 Structural behavior

Alumni respondents scored high for the competence dimension of structural behavior. The students that have attended entrepreneurial courses are lagging behind a little on this element of attitude. One explanation can be that students have more ideas and are more creative, but less structured in their thought process. This indicates that the students perceive themselves as less capable of dealing with ambiguity and uncertainty in which are the main elements in the real life of entrepreneurs. On an average, male alumni scored slightly higher on structural behavior ($M = 15.13$) than female alumni (15.07). Female students show the highest score on structural behavior ($M = 15.04$) whereas male students show the lowest score ($M = 14.94$). There are no gender differences with regard to the perception of structural behavior for both students and

alumni respondents. However, there are significant differences on the mean scores of alumni faculty clusters. The Post-hoc tests (Table 6) shows that *ST* and *MB* program clusters are significantly different in terms of structural behavior $p = 0.0001$. However, the other program cluster comparisons are not significantly different from one another.

Table 2
Self-perception of the Key Entrepreneurship Competence (Attitude) by Students and Alumni

Entrepreneurship Competence (Attitude)	Students (n = 2232)				Alumni (n = 2007)			
	Min	Max	M	SD	Min	Max	M	SD
Risk propensity	4	20	14.00	1.921	6	20	14.28	2.218
Need for achievement	2	10	7.75	1.297	3	10	7.60	1.310
Self-efficacy	4	20	14.65	2.027	7	20	14.90	2.164
Structural behavior	4	20	14.99	2.163	7	20	15.10	2.276

Table 3
Results of Independent t-test of Gender and the Key Entrepreneurship Competence (Attitude)

Entrepreneurship Competence (Attitude)	Students (n = 2232)			Alumni (n = 2007)		
	Male	Female	t-statistic	Male	Female	t-statistic
Mean	Mean	Mean		Mean	Mean	
Risk propensity	13.99	14.02	.105	14.36	14.19	3.126
Need for achievement	7.58	7.89	30.685***	7.60	7.59	.063
Self-efficacy	14.63	14.68	.360	14.95	14.84	1.351
Structural behavior	14.94	15.04	1.304	15.13	15.07	.436

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4
Results of one-way ANOVA test of Program Clusters and the Key Entrepreneurship Competence (Attitude)

Entrepreneurship Competence (Attitude)	Students (n = 2232)				Alumni (n = 2007)			
	ST	SSH	MB	F-statistic	ST	SSH	MB	F-statistic
Mean	Mean	Mean	Mean		Mean	Mean	Mean	
Risk propensity	14.05	14.08	13.93	1.241	14.13	14.26	14.38	2.734
Need for achievement	7.66	7.69	7.84	5.159**	7.47	7.51	7.71	7.447**
Self-efficacy	14.67	14.44	14.70	2.110	14.72	14.82	15.04	4.793**
Structural behavior	15.01	14.76	15.05	2.187	14.81	15.14	15.30	10.204***

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.2 Skills

Students and alumni participated in this study were asked as a first indication of (entrepreneurial) skills whether entrepreneurship education they received have provided skills and know-how that enable them to

Table 5
Results of Post Hoc Tests for Program Clusters and Need for Achievement
(Component of Entrepreneurship Competence - Attitude) of Students

<i>Multiple Comparisons</i>						
<i>Dependent Variable: Need for achievement</i>						
<i>Tukey HSD</i>						
					<i>95% Confidence Interval</i>	
<i>(I) Category</i>	<i>(J) Category</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>Lower Bound</i>	<i>Upper Bound</i>
<i>ST</i>	<i>SSH</i>	-.035	.084	.910	-.23	.16
	<i>MB</i>	-.185*	.059	.005	-.32	-.05
<i>SSH</i>	<i>ST</i>	.035	.084	.910	-.16	.23
	<i>MB</i>	-.150	.082	.162	-.34	.04
<i>MB</i>	<i>ST</i>	.185*	.059	.005	.05	.32
	<i>SSH</i>	.150	.082	.162	-.04	.34

*. The mean difference is significant at the 0.05 level.

Table 6
Results of Post Hoc Tests for Program Clusters and the Key Entrepreneurship Competence
(Attitude) of Alumni

<i>Multiple Comparisons</i>							
<i>Tukey HSD</i>							
<i>95% Confidence Interval</i>							
<i>Dependent Variable</i>	<i>(I) Category</i>	<i>(J) Category</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>Lower Bound</i>	<i>Upper Bound</i>
<i>Need for achievement</i>	<i>ST</i>	<i>SSH</i>	-.033	.093	.932	-.25	.19
		<i>MB</i>	-.233*	.063	.001	-.38	-.08
	<i>SSH</i>	<i>ST</i>	.033	.093	.932	-.19	.25
		<i>MB</i>	-.200	.090	.069	-.41	.01
	<i>MB</i>	<i>ST</i>	.233*	.063	.001	.08	.38
		<i>SSH</i>	.200	.090	.069	-.01	.41
<i>Self-efficacy</i>	<i>ST</i>	<i>SSH</i>	-.101	.155	.790	-.46	.26
		<i>MB</i>	-.319*	.105	.007	-.56	-.07
	<i>SSH</i>	<i>ST</i>	.101	.155	.790	-.26	.46
		<i>MB</i>	-.217	.149	.310	-.57	.13
	<i>MB</i>	<i>ST</i>	.319*	.105	.007	.07	.56
		<i>SSH</i>	.217	.149	.310	-.13	.57
<i>Structural Behavior</i>	<i>ST</i>	<i>SSH</i>	-.336	.162	.095	-.72	.04
		<i>MB</i>	-.495*	.110	.000	-.75	-.24
	<i>SSH</i>	<i>ST</i>	.336	.162	.095	-.04	.72
		<i>MB</i>	-.159	.156	.565	-.53	.21
	<i>MB</i>	<i>ST</i>	.495*	.110	.000	.24	.75
		<i>SSH</i>	.159	.156	.565	-.21	.53

*. The mean difference is significant at the 0.05 level.

run a viable business. Between the two group of respondents, alumni have the highest scores ($M = 3.67$, $SD = .816$) on the learned skills and know-how of entrepreneurship compared to current students ($M = 2.88$, $SD = .865$). However both groups of respondents rated the contribution of entrepreneurship education as moderately limited (between 2.88 and 3.67 on a scale from 1 to 5). Female alumni, more than male alumni are of the opinion that entrepreneurship education gave them the skills and know-how that enabled them to be entrepreneurs. Alumni in the MB program cluster rate high on the statement - entrepreneurship courses gave me the skills and know-how that enable me to run a business. There are significant differences in the mean score of alumni by program clusters. The Post-hoc tests shows that *ST* and *MB* are significantly different ($p = .0001$) in terms of skills development of alumni. However, the other program cluster comparisons are not significantly different from one another. Table 7 shows the overall results. The statistics for each of the five entrepreneurial skills: creativity, analysis, motivation, networking and adaptability are presented in next part of this section.

Table 7
Results of Independent *t*-test of Gender and Skills Development

	Students ($n = 2232$)			Alumni ($n = 2007$)		
	Male	Female	<i>t</i> -statistic	Male	Female	<i>t</i> -statistic
<i>Entrepreneurial Competence</i>	Mean	Mean		Mean	Mean	
Skills and know-how that enable me to run a business	2.86	2.90	1.188	3.67	3.68	.051

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8
Results of one-way ANOVA test of Program Clusters and the Skills Development

	Students ($n = 2232$)				Alumni ($n = 2007$)			
	<i>ST</i>	<i>SSH</i>	<i>MB</i>	<i>F</i> -statistic	<i>ST</i>	<i>SSH</i>	<i>MB</i>	<i>F</i> -statistic
<i>Entrepreneurship Competence</i>	Mean	Mean	Mean		Mean	Mean	Mean	
Skills and know-how that enable me to run a business	2.86	2.90	2.89	.343	3.59	3.65	3.74	7.281**

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.2.1 Creativity

The average scores on creativity for students and alumni respondents are approximately same. There are significant differences in the alumni program clusters. The Post-hoc tests shows that *ST* and *MB* program clusters are significantly different ($p = .024$) in terms of creativity (a component of skills development) of alumni. However, the other program cluster comparisons are not significantly different from one another. Table 14 shows the overall results. Alumni in the program cluster *ST* have the lowest score on creativity compared with respondents in two other clusters. However the mean score differences are very small. The findings provide evidence that the entrepreneurship courses have helped students improve their ability to connect ideas and turn problems into new opportunities.

Table 9
Results of Post Hoc Tests for Program Clusters and the Skills Development of Alumni

Multiple Comparisons

Dependent Variable: skills and know-how that enable me to run a business

Tukey HSD

<i>(I) Category</i>	<i>(J) Category</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>95% Confidence Interval</i>	
					<i>Lower Bound</i>	<i>Upper Bound</i>
<i>ST</i>	<i>SSH</i>	-.058	.058	.579	-.19	.08
	<i>MB</i>	-.149*	.039	.000	-.24	-.06
<i>SSH</i>	<i>ST</i>	.058	.058	.579	-.08	.19
	<i>MB</i>	-.091	.056	.235	-.22	.04
<i>MB</i>	<i>ST</i>	.149*	.039	.000	.06	.24
	<i>SSH</i>	.091	.056	.235	-.04	.22

*. The mean difference is significant at the 0.05 level.

4.2.2 Analytical skills

Alumni respondents claim to have more analytical skills than students. Male alumni have given themselves higher scores on ‘analyzing’ skills than female alumni. However the gender and program clusters for both the group of respondents shows no significant differences on analytical skills. This shows that respondents in this study have acquired sufficient skills related to opportunity recognition, which is particularly important in creating a new venture.

4.2.3 Motivation

Alumni respondents judge themselves as more capable of motivating others than students group. These results can be explained by the fact that alumni had some sort of higher environmental exposure and therefore they already have more practical experience in motivating people around them. There is a significant difference regarding motivation among the male and female alumni. Male alumni rated themselves as the best motivators compared to female alumni. There are no significant program clusters differences regarding the motivating competence.

4.2.4 Networking

Most of the alumni participated in this study already embarked in the world of work and therefore they should already have practical experience in networking and should be more aware of the importance of this aspect in day-to-day living. Based on the statistical data from this study, we confirm that alumni have developed strong skills in networking compared to the student respondents (Table 10). Alumni in the *MB* program cluster give themselves the highest rates on networking skills. It turns out that there are no significant mean differences in the networking skills of gender and program clusters for both the group of respondents (Tables 11 and 12).

4.2.5 Adaptability

The adaptability skills could be credited to an individual's ability to change something or oneself to fit to the occurring changes or unexpected turbulence in the work eco-systems. Successful entrepreneurs are expected to have a high level of adaptability skills to react tactfully for many different business challenges. Since adaptability skills are crucial for entrepreneurial success, it has been included in this study. The adaptability skills differ slightly among the two groups of respondents. Alumni tend to have the highest degree of adaptability. The mean score for male and female alumni significantly differ in their adaptability skills. Male alumni rated themselves high. It is also revealed that there are differences on opinion among respondents in different program clusters pertaining to adaptability. The Post-hoc tests shows that *SSH* and *MB* program clusters are significantly different ($p = .036$) in terms of flexibility (a component of skills development) of students. However, the other program cluster comparisons are not significantly different from one another. Table 13 shows the overall results.

Table 10
Self-perception of the Key Entrepreneurship Competence (Skills) by Students and Alumni

Entrepreneurship Competence (Skills)	Students (n = 2232)				Alumni (n = 2007)			
	Min	Max	M	SD	Min	Max	M	SD
Creativity	4	15	10.67	1.680	4	15	10.90	1.744
Analysis	3	15	10.48	1.701	3	15	10.85	1.831
Motivation	4	20	13.59	1.952	7	20	14.19	2.125
Networking	4	20	14.20	2.091	6	20	14.64	2.200
Flexibility/Adaptability	4	15	10.76	1.659	3	15	10.96	1.703

Table 11
Results of Independent t-test of Gender and the Key Entrepreneurship Competence (Skills)

Entrepreneurship Competence (Skills)	Students (n = 2232)			Alumni (n = 2007)		
	Male	Female	t-statistic	Male	Female	t-statistic
	Mean	Mean		Mean	Mean	
Creativity	10.69	10.65	0.270	10.95	10.85	1.595
Analysis	10.48	10.49	0.035	10.90	10.80	1.429
Motivation	13.56	13.62	0.632	14.31	14.07	6.294**
Networking	14.12	14.27	2.703	14.72	14.57	2.237
Flexibility/Adaptability	10.81	10.72	1.403	11.06	10.85	7.414**

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.3 Knowledge

The final element that makes up the entrepreneurship key competence is knowledge which in short directed to learning to comprehend entrepreneurship. Knowledge is defined as having a broad understanding and knowledge of entrepreneurship, including the role entrepreneurs and entrepreneurship plays in modern

Table 12
Results of one-way ANOVA test of Program Clusters and the Key Entrepreneurship Competence (Skills)

<i>Entrepreneurship Competence (Skills)</i>	<i>Students (n = 2232)</i>				<i>Alumni (n = 2007)</i>			
	<i>ST</i>	<i>SSH</i>	<i>MB</i>	<i>F-statistic</i>	<i>ST</i>	<i>SSH</i>	<i>MB</i>	<i>F-statistic</i>
	<i>Mean</i>	<i>Mean</i>	<i>Mean</i>		<i>Mean</i>	<i>Mean</i>	<i>Mean</i>	
Creativity	10.62	10.70	10.70	.652	10.75	10.99	10.98	3.910*
Analysis	10.48	10.58	10.45	.750	10.74	10.83	10.94	2.490
Motivation	13.61	13.67	13.55	.575	14.13	14.33	14.20	.901
Networking	14.18	14.18	14.22	.101	14.53	14.64	14.73	1.769
Flexibility/Adaptability	10.78	10.55	10.81	3.176*	10.87	11.00	11.01	1.593

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 13
Results of Post Hoc Tests for Program Clusters and the Key Entrepreneurship Competence (Skills) of Students

<i>Multiple Comparisons</i>						
<i>Dependent Variable: Flexibility</i>						
<i>Tukey HSD</i>						
<i>(I) Category</i>	<i>(J) Category</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>95% Confidence Interval</i>	
					<i>Lower Bound</i>	<i>Upper Bound</i>
<i>ST</i>	<i>SSH</i>	.233	.107	.076	-.02	.48
	<i>MB</i>	-.027	.076	.932	-.21	.15
<i>SSH</i>	<i>ST</i>	-.233	.107	.076	-.48	.02
	<i>MB</i>	-.260*	.105	.036	-.51	-.01
<i>MB</i>	<i>ST</i>	.027	.076	.932	-.15	.21
	<i>SSH</i>	.260*	.105	.036	.01	.51

*. The mean difference is significant at the 0.05 level.

economies and societies. Alumni and students are asked as a first indication of knowledge whether they perceive entrepreneurship education has helped them to better understand the role of entrepreneurs in society. Alumni respondents perceived that higher education indeed more helpful in understanding the role of entrepreneurs in society than students' respondents. There are no significant differences between the mean score of male alumni and female alumni. They are of the opinion that entrepreneurship education they have received helped them to better understand the role of entrepreneurs in society. There are significant differences in the program cluster of alumni. The Post-hoc tests shows that *ST* and *MB* program clusters are significantly different ($p = .0001$) in terms of knowledge of entrepreneurship among students. *SSH* and *MB* clusters also found to be significantly different ($p = .0001$). Table 17 shows the overall results. Alumni in the *MB* cluster scored high and thus concurred that their entrepreneurship education helped in improving students' knowledge about entrepreneurship and understanding the role of entrepreneurs in society. It also signifies that content knowledge is important for individuals to gain confidence to consider entrepreneurship as a career alternative.

Table 14

Results of Post Hoc Tests for Program Clusters and the Key Entrepreneurship Competence (Skills) of Alumni

Multiple Comparisons						
Dependent Variable: Creativity						
Tukey HSD						
					95% Confidence Interval	
(I) Category	(J) Category	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
ST	SSH	-.239	.125	.134	-.53	.05
	MB	-.222*	.085	.024	-.42	-.02
SSH	ST	.239	.125	.134	-.05	.53
	MB	.017	.120	.989	-.26	.30
MB	ST	.222*	.085	.024	.02	.42
	SSH	-.017	.120	.989	-.30	.26

*. The mean difference is significant at the 0.05 level.

It turns out that students and alumni have a better knowledge of entrepreneurship. Both the group rated their scores within the range of “somewhat agree” to “agree” on a scale of five points. There are significant differences in the mean score of students’ gender. Female students scored higher than male in this aspect. In other words, female students, in their opinion they are better capable of: distinguishing between good and bad entrepreneurs, knowing what entrepreneurship is about and knowing what defines successful entrepreneurship (Table 16) than male students. Furthermore there is significant difference in the students’ faculty clusters, whereby MB cluster spearhead the mean scores compared to other two clusters. The Post-hoc tests shows that ST and MB program clusters are significantly different ($p = .001$) in terms of role of entrepreneurs among alumni. SSH and MB clusters also found to be significantly different ($p = .004$). Table 19 shows the overall results.

Table 15

Self-perception of the Key Entrepreneurship Competence by Students and Alumni (Knowledge)

Entrepreneurship Competence (Knowledge)	Students (n = 2232)				Alumni (n = 2007)			
	Min	Max	M	SD	Min	Max	M	SD
Knowledge of Entrepreneurship	3	15	11.02	1.891	4	15	10.85	1.878
Role of Entrepreneur	1	5	2.64	.729	1	5	3.72	.785

5. CONCLUSION

Entrepreneurship education seeks to prepare people to be responsible, enterprising individuals who have the attitudes, skills and knowledge necessary to achieve the goals they set for themselves to live a fulfilled life. The entrepreneurship key competence is a composition of an entrepreneurial attitude, entrepreneurial skills and knowledge of entrepreneurship. The study shows that entrepreneurship education has a positive effect on the entrepreneurship key competence of individuals. Students give low scores (score ranges

Table 16
Results of Independent *t*-test of Gender and the Key Entrepreneurship Competence (Knowledge)

	Students (<i>n</i> = 2232)			Alumni (<i>n</i> = 2007)		
	Male	Female		Male	Female	
<i>Entrepreneurship Competence (Knowledge)</i>	<i>Mean</i>	<i>Mean</i>	<i>t-statistic</i>	<i>Mean</i>	<i>Mean</i>	<i>t-statistic</i>
Knowledge of Entrepreneurship	10.87	11.14	11.388**	10.88	10.82	.475
Role of Entrepreneur	2.63	2.65	.341	3.71	3.73	.415

Note: **p* < 0.05, ***p* < 0.01, ****p* < 0.001

Table 17
Results of one-way ANOVA test of Program Clusters and the Key Entrepreneurship Competence (Knowledge)

<i>Entrepreneurship Competence (Knowledge)</i>	Students (<i>n</i> = 2232)				Alumni (<i>n</i> = 2007)			
	<i>ST</i>	<i>SSH</i>	<i>MB</i>		<i>ST</i>	<i>SSH</i>	<i>MB</i>	
	<i>Mean</i>	<i>Mean</i>	<i>Mean</i>	<i>F-statistic</i>	<i>Mean</i>	<i>Mean</i>	<i>Mean</i>	<i>F-statistic</i>
Knowledge of Entrepreneurship	10.69	10.89	11.35	30.515***	10.79	10.73	10.92	1.664
Role of Entrepreneur	2.62	2.68	2.65	.791	3.65	3.62	3.79	9.446***

Note: **p* < 0.05, ***p* < 0.01, ****p* < 0.001

Table 18
Results of Post Hoc Tests for Program Clusters and the Key Entrepreneurship Competence (Knowledge of Entrepreneurship)

<i>Multiple Comparisons</i>						
<i>Dependent Variable: Knowledge of Entrepreneurship</i>						
<i>Tukey HSD</i>						
					<i>95% Confidence Interval</i>	
<i>(I) Category</i>	<i>(J) Category</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>Lower Bound</i>	<i>Upper Bound</i>
<i>ST</i>	<i>SSH</i>	-.197	.121	.233	-.48	.09
	<i>MB</i>	-.659*	.086	.000	-.86	-.46
<i>SSH</i>	<i>ST</i>	.197	.121	.233	-.09	.48
	<i>MB</i>	-.462*	.119	.000	-.74	-.18
<i>MB</i>	<i>ST</i>	.659*	.086	.000	.46	.86
	<i>SSH</i>	.462*	.119	.000	.18	.74

*. The mean difference is significant at the 0.05 level.

Table 19
Results of Post Hoc Tests for Program Clusters and the Key Entrepreneurship Competence
(Role of Entrepreneurs)

<i>Multiple Comparisons</i>						
<i>Dependent Variable: Better understand the role of entrepreneurs in society</i>						
<i>Tukey HSD</i>						
					<i>95% Confidence Interval</i>	
<i>(I) Category</i>	<i>(J) Category</i>	<i>Mean Difference (I-J)</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>Lower Bound</i>	<i>Upper Bound</i>
<i>ST</i>	<i>SSH</i>	.031	.056	.845	-.10	.16
	<i>MB</i>	-.142*	.038	.001	-.23	-.05
<i>SSH</i>	<i>ST</i>	-.031	.056	.845	-.16	.10
	<i>MB</i>	-.173*	.054	.004	-.30	-.05
<i>MB</i>	<i>ST</i>	.142*	.038	.001	.05	.23
	<i>SSH</i>	.173*	.054	.004	.05	.30

*. The mean difference is significant at the 0.05 level.

between Disagree to somewhat Agree) on 10 out of 12 characteristics, whereby alumni give high scores (score ranges between somewhat agree to agree) for all the 12 characteristics associated with entrepreneurial competence. The respondents had shown that they possessed exacting personality traits and behavioural distinctiveness that fit McClelland's (1961) description of motivation and emotion as key psychological and social rudiments that impel individuals to venture into entrepreneurship.

Foundation courses in entrepreneurship should be offered for all undergraduate students during their first year to influence their mind-set right from the beginning and create an awareness, understanding and capacity of an alternative career option as an entrepreneur. The exposure during the early stages of university life provides students a platform to build depth and capability in preparation for an entrepreneurial career at the point of graduation. The introductory courses in entrepreneurship are obligatory and it should be designed to suit different need of students (*ST*-Science and Technology cluster and *SS*-Social Sciences cluster). The course context should not dominantly that of business nature with the pedagogical range used is narrow and over-focused upon business cases when they are applied to non-business situations. It is well established that entrepreneurship education plays a vital role in cultivating future innovative entrepreneurs and in enhancing the competence of existing entrepreneurs to nurture their business to greater levels of success. The earlier and widespread exposure to entrepreneurship in HEIs, the more likely that students and graduates will consider becoming entrepreneurs at some stage in their life.

The National Higher Education Action Plan highlights the need to embed creativity, innovation and entrepreneurship into Malaysian higher education and proposes a number of actions to unleash graduates entrepreneurial and innovative capabilities. There is a need to stimulate the entrepreneurial mindsets of young people and to create a more favourable climate for entrepreneurship, as many HEIs are not fully exploiting its entrepreneurial potential. Education has an important role to play in improving the

entrepreneurial key competence of young graduates. Obvious the entrepreneurship competence is looked up as important requirements for graduates personal fulfilment, social inclusion, and employability in a knowledge-based society. This study bring forward the extent to which students and alumni (recent graduates) in general benefited from the entrepreneurship education which helps to increase their intention to participate as entrepreneurs in the Malaysian economic.

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