

Malay Students' Entrepreneurial Attitude and Entrepreneurial Efficacy in Vocational and Technical Secondary Schools of Malaysia

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ABSTRACT

Entrepreneurial attitude and entrepreneurial self-efficacy are considered as important factors affecting the intention to step into the process of entrepreneurship. However, there is limited information on students' entrepreneurial attitude and entrepreneurial self-efficacy, particularly for technical school students who have acquired the technical knowledge to become entrepreneurs. This study has surveyed entrepreneurial attitude and entrepreneurial self-efficacy among secondary school students in Malaysia. A total of 2,574 students undertaking technical subjects were randomly selected as the participants. A set of questionnaire was employed to measure students' attitudes toward and efficacy in entrepreneurship. Findings of the study indicate that the student scored high on entrepreneurial attitude components including self-esteem cognition, achievement cognition, and achievement affect. However, the students' mean score for entrepreneurial self-efficacy was between moderate to high level. This paper discusses the importance of intervention programmes and proper teaching and learning strategies to improve technical students' entrepreneurial attitude and entrepreneurial self-efficacy.

Keywords: Entrepreneurial attitude, entrepreneurial efficacy, technical school students, Malaysia

INTRODUCTION

Entrepreneurial attitude and entrepreneurial efficacy have been considered as important factors influencing intention to become an entrepreneur as well as determining entrepreneurs' success (De Noble, Jung & Ehlrich, 1999; Robinson *et al.*, 1991; Ajzen, 2002; 1991). However, little attention has been directed to measuring entrepreneurial attitude (Mohd Noor Mohd Sharrif & Mohammad Basir, 2009) and entrepreneurial efficacy among Malaysian students. Therefore, entrepreneurship educators have been facing the major challenge of how to capture and develop students' innate entrepreneurial capabilities (Anderson & Jack, 2008). This may be because of the on-going

debates among scholars on the necessity and importance of entrepreneurship education for school students based on the assumption that school students may not have the maturity and experience required for understanding the complexities and challenges associated with the business world. In fact, some researchers highly emphasize on offering entrepreneurship education at the earliest possible age for various reasons (Peterman & Kennedy, 2003). First, the initial aspirations towards entrepreneurship take shape at secondary level (Heinonen, 2007; Man & Yu, 2007; Wilson, Kickul & Marlino, 2007). Second, adolescent is the ideal age for acquiring knowledge and improving positive attitude toward entrepreneurship (Fillion,

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1994). Moreover, students at high school level have higher entrepreneurial self-efficacy and are more likely to have the intention to become entrepreneurs (Wilson, Kickul & Marlino, 2007). Finally, younger students have innate entrepreneurial attitude that should be explored, preserved, and developed since “students at this age tend to display an entrepreneurial attitude in everything they do – they are usually very creative, straightforward and unconcerned with the potential risks inherent in their actions” (Fuchs, Werner & Wallau, 2008, p. 367).

However, entrepreneurship scholars highlighted that the objectives of entrepreneurship education at school level should be different from those of the university entrepreneurship education. University entrepreneurship programmes may target at exposing students with detailed knowledge and complex theoretical foundations of entrepreneurship, entrepreneurship education at school level should aim at providing students with the opportunities to gain entrepreneurship experience through experiential learning, practical training, and project work in co-operation with enterprises, as suggested by Fuchs, Werner & Wallau (2008). This study aimed to narrow the gap in the literature and empirical research on school students’ entrepreneurial attitude and entrepreneurial self-efficacy. More specifically, it attempted to determine the overall Malay secondary technical school students’ entrepreneurial attitude orientation (EAO) and their perceived entrepreneurial self-efficacy (ESE) based on the assumption that they have acquired the technical knowledge needed to launch a business, and if provided with purposeful education, they may more likely to create their own venture (Chen, Greene & Crick, 1998). Furthermore, this study also investigated the correlation between different dimensions of entrepreneurial self-efficacy, based on Malay secondary school students’ perception. This paper first discusses entrepreneurship education in Malaysia. Then, entrepreneurial attitude, entrepreneurial self-efficacy, and the ways to enhance them through entrepreneurship education are also proposed.

The next section provides details of the research methodology and findings. The closing part of the paper proposes discussion and implications of the findings and the agendas for further studies.

ENTREPRENEURSHIP EDUCATION IN MALAYSIA

With the strong ambition of becoming a leading developed country through a knowledge-based and innovative economy by the year 2020, Malaysia has focused on entrepreneurship development as an effective means to enact the vision. Moreover, entrepreneurship has been considered as one of the effective solutions to economic and social crises that Malaysia is currently struggling with, particularly the increasing number of unemployed graduates and the challenges of industrialization (Firdaus *et al.*, 2009; Mastura Jaafar & Abdul Rashid Abdul Aziz, 2008; Ramayah & Zainon Harun, 2005). Accordingly, various strategies have been developed by policy makers in both macro- and micro levels to provide the infrastructures and create the supportive and encouraging environment for entrepreneurial activities all over the nation. Enhancing the quality of human capital and equipping *Bumiputeras* (son of the soil) 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 (Ninth Malaysia Plan, 2006-2010).

In addition, the budget allocated to implement entrepreneurship development programmes increased by 70 percent in the Ninth Malaysia Plan compared to the Eighth Malaysia Plan, which is an evidence of the importance and necessity of entrepreneurship education and training programmes in the process of transition from a developing to a developed country, though, more efforts are required to encourage the people to become entrepreneurs (Md Nor Othman, Ezlika Ghazali & Yeoh Sung Sung, 2006).

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 programs and courses, were other important strategies developed by the Malaysian government (Fauziah, Rohaizat & Siti Haslinah, 2004). As a result, in less than two decades, entrepreneurship education has increasingly grown all over the country and implementing entrepreneurship development programmes have recently become compulsory for all of the institutions of higher education in Malaysia (Mastura Jaafar & Abdul Rashid Abdul Aziz, 2008). Furthermore, many researchers have emphasized the importance and necessity of developing the positive attitudes toward entrepreneurship among *Bumiputeras* (Malays) and improving their entrepreneurial self-efficacy in order to enhance the probability of their success in their entrepreneurial activities. Hashim (2002) highlighted that Malay entrepreneurs' lack of strategic framework, entrepreneurial knowledge, and ineffective entrepreneurial strategies as the reasons for *Bumiputeras*' business failures. Amran Awang *et al.* (2009) called for more in-depth studies on entrepreneurship development to enhance *Bumiputeras*' small and medium enterprise practices. Despite all the efforts by the Malaysian government to develop entrepreneurial qualities among the Malay people, there is not enough knowledge on Malays' attitude toward entrepreneurship and entrepreneurial self-efficacy, particularly for secondary school students undertaking technical subjects who have acquired the technical knowledge to establish their own businesses (Mohd Noor Mohd Sharif & Mohammad Basir Saud, 2009).

ENTREPRENEURIAL ATTITUDE AND ENTREPRENEURIAL SELF-EFFICACY

A review of the robust literature on entrepreneurship indicates that entrepreneurship researchers have focused on three main areas

to explain entrepreneurial behaviour. First, entrepreneurship researchers sought the characteristics which differentiate entrepreneurs from other people based on the assumption that it is the entrepreneurs who entrepreneurial process; the more their traits are recognized, the better the entrepreneurial qualities can be developed in others through entrepreneurship education and training (Kundu & Rani, 2008). Second, entrepreneurship researchers focused on demographic factors describing entrepreneurial behaviours and activities, such as age, gender, and prior experience (Shapero & Sokol, 1982; Louw *et al.*, 2003; Liñán, Rodríguez & Rueda-Cantucho, 2005). However, many researchers have questioned the efficacy of personality characteristics and demographic factors to explain entrepreneurial behaviour because of contradictory research findings and relatively static nature of the characteristics (Krueger, Michael & Carsrud, 2000; Mueller & Thomas, 2000; Ajzen, 1991; Robinson *et al.*, 1991). Third, entrepreneurship researchers looked at entrepreneurial behaviour through attitudinal perspective, based on the assumption that entrepreneurial attitude is a more consistent measure of entrepreneurial behaviour that can be improved by interventions from environment (Robinson *et al.*, 1991; Ajzen, 2002; 1991).

In this sense, researchers approached entrepreneurial attitude from two main ways. The first approach considers entrepreneurial attitude as ones' feelings, thoughts, and conations toward entrepreneurship. Therefore, entrepreneurial behaviour is a function of attitude toward the value, benefit, and favourability of entrepreneurship, and most importantly, a uni-dimensional construct (Ajzen & Fishbein, 1977). The second approach considers entrepreneurial attitude as a multi-dimensional construct (Robinson *et al.*, 1991) which encompasses four personality factors, as listed below:

- Need for achievement which refers to the perceived results and outcomes of new venture creation which drives one to take the burden and responsibilities of launching a new business;

- Personal control over entrepreneurial behaviour which reflects the perceptions of control and influence on venture creation outcomes;
- Innovation which is thinking of new ideas, products, or methods; and
- Self-esteem which indicates self-confidence and perceived entrepreneurial competencies.

Moreover, entrepreneurial attitude encompasses three aspects, namely, affection (feeling and emotion), cognition (thoughts and belief), and conation (action and behaviour). It is worth to mention that the combination of all the three dimensions of entrepreneurial attitude in terms of affection, cognition, and behaviour motivate one to become an entrepreneur.

As the most cited personal traits of entrepreneurs, entrepreneurial self-efficacy is defined as the strength of beliefs in one's capabilities to successfully perform the specific roles and tasks of an entrepreneur (De Pillis & Reardon, 2007; Segal *et al.*, 2005; Chen, Greene & Crick, 1998). It is grounded in social cognitive theory (Bandura, 1997), which defines self-efficacy as the personal believe in one's abilities and skills to successfully perform a specific task. According to the theory, human action is a function of personal, behavioral, and environmental factors. Therefore, entrepreneurial self-efficacy is a more robust construct for explaining entrepreneurial behaviour since it includes both personal and environmental factors affecting entrepreneurial behavior (McGee *et al.*, 2009). Additionally, entrepreneurial self-efficacy is one of the main reasons why some people with equal abilities intend to undertake the responsibilities, risks, and challenges to step into the process of a new venture creation while others totally avoid them (Zhao, Seibert & Hills, 2005; Shane, Locke & Collins, 2003; Chen, Greene & Crick, 1998). It enables entrepreneurs to recognize business opportunities, manage the resources, and cope with the challenges of the whole entrepreneurship processes (Kumar, 2007; Wilson, Kickul & Marlino, 2007; Shane, Locke & Collins, 2003). It also can differentiate

students from entrepreneurship education background from those who do not undertake it (De Noble, Jung & Ehrlich, 1999). However few studies have focused on entrepreneurial self-efficacy of students at secondary and high school level (Wilson, Kickul & Marlino, 2007).

Entrepreneurship researchers also approached the analysis of entrepreneurial self-efficacy in two main ways. First, entrepreneurial self-efficacy is an overall perception of abilities in starting up a business (Wilson, Kickul & Marlino, 2007). Second, entrepreneurial self-efficacy is a general perception which originates from various dimensions (McGee *et al.*, 2009; Barbosa, Gerhardt & Kickul, 2007; Zhao, Seibert & Hills, 2005; Krueger, Michael & Carsrud, 2000; De Noble, Jung & Ehrlich, 1999; Chen, Greene & Crick, 1998). De Noble, Jung & Ehrlich (1999) 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. More specific to the entrepreneurs' tasks, Barbosa, Gerhardt & Kickul (2007) classified four dimensions of entrepreneurial self-efficacy, as:

- Opportunity identification which is a strong perception of abilities in new business opportunity identification and development;
- Relationship self-efficacy which refers to perceived capability in building relationship with important people;
- Managerial self-efficacy which is the perceptions of abilities in managerial tasks; and
- Tolerance self-efficacy which reflects perceived capability to work under challenging conditions.

Based on the literature, it can be said that entrepreneurial attitude and self-efficacy are multi-dimensional factors affecting entrepreneurial intention in many different ways. The following section discusses about

the significance of improving entrepreneurial attitude and entrepreneurial self-efficacy of students through entrepreneurship education.

ENTREPRENEURSHIP EDUCATION AND STUDENTS' ENTREPRENEURIAL ATTITUDE AND SELF-EFFICACY

Entrepreneurial attitude and self-efficacy can be enhanced through environmental factors, particularly through entrepreneurship education and training programmes (Harris & Gibson, 2008; Baum & Locke, 2004; Luthje & Franke, 2003). Accordingly, many entrepreneurship education programmes have been developed to improve students' entrepreneurial attitude orientation (Florin, Karri & Rossiter, 2007; Mitra & Matlay, 2004; Van Wyk & Boshoff, 2004; Robinson *et al.*, 1991) and entrepreneurial self-efficacy (Wilson, Kickul & Marlino, 2007). Anderson & Jack (2008) emphasize that entrepreneurship education programmes can influence students' entrepreneurial attitudes by enhancing their awareness toward entrepreneurship as an alternative career choice and encouraging favourable attitudes toward entrepreneurship.

Majority of the research findings on students' entrepreneurial attitude have shown students' positive attitude toward entrepreneurship (Mohd Noor Mohd Sharrif & Mohammad Basir, 2009; Harris & Gibson, 2008; Kundu & Rani, 2008; 2007). Meanwhile, more recent research findings indicate that education programmes do not enhance students' attitude towards entrepreneurship, instead they reduce students' ambition to become entrepreneurs (Oosterbeek *et al.*, 2010; Fuchs, Werner & Wallau, 2008). This necessitates more investigation of students' attitudes toward entrepreneurship and more purposeful entrepreneurship training and programmes to enhance their entrepreneurial attitude.

On the other hand, entrepreneurship education has been highlighted as one of the key environmental factors enhancing students' self-efficacy to launch a new business (Baum & Locke, 2004; Luthje & Franke, 2003). In Rae & Carswell's (2000) points of view,

entrepreneurial self-efficacy can be developed over time by being engaged in experiential and social learning activities. Meanwhile, Erikson (2003) developed a model for entrepreneurial competencies in which entrepreneurial self-efficacy can be enhanced by involving in three major learning opportunities which include mastery experience, vicarious experience, and social experience. The author also pointed out that mastery experience is the most effective way to develop strong entrepreneurial competencies in students. The mechanism through which entrepreneurship education improves students' intention to become entrepreneurs has also been attempted by Zhao, Seibert & Hills (2005) who found empirical support for their proposed model in which self-efficacy mediates the relationship between entrepreneurial education and entrepreneurial intention of university students.

Accordingly, various learning opportunities and programmes (such as developing business plan, running a real/simulated business, and conducting a case study) have been developed to improve the different aspects of students' entrepreneurial self-efficacy. It is argued that involvement in these activities shapes students' perceptions of their entrepreneurial capabilities and enhances their motivation to engage in entrepreneurial behaviours (Wilson, Kickul & Marlino, 2007; Fayolle, Gailly & Lassas-Clerc, 2006; Zhao, Seibert & Hills, 2005; Erikson, 2003; Chen, Greene & Crick, 1998). Despite the numerous research on entrepreneurial self-efficacy, the knowledge on different dimensions of the construct is still limited (McGee *et al.*, 2009), particularly for school students. Based on the literature on students' entrepreneurial attitude, entrepreneurial self-efficacy, and entrepreneurship education, this research aimed to determine Malay secondary school students' entrepreneurial attitude and self-efficacy in order to measure entrepreneurial potential among Malay secondary school students. Furthermore, it focuses on measuring different dimensions of students' entrepreneurial attitude and self-efficacy.

METHODOLOGY

This research employed a survey method to determine the entrepreneurial attitude and entrepreneurial self-efficacy of Malay secondary school students. A sample of 2,672 students from vocational and technical secondary schools in three states of Malaysia (Selangor, Pahang, and Perak) was randomly selected to participate in the study. These Malay technical secondary students were selected as the participants of this study because of Malaysian government's concentration on developing entrepreneurial attitudes and capabilities among *Bumiputras* (Firdaus *et al.*, 2009). It is worth to mention that all the technical secondary school students in the states were selected as respondents of the study who also formed the population of the study, out of which 1,000 students were sampled from each state. Moreover, students were also selected from different technical and vocational programmes as illustrated in Appendix 1. The data were gathered in October-November 2008 and the permissions to conduct the survey were obtained from Educational Planning and Research Division, Ministry of Education and the Director of Education of the three selected states. The school principals were contacted to fix the date of data collection and make the necessary preparations with Form Four students in the vocational and technical classes. The data were collected by the researchers.

Measures

In order to determine the students' entrepreneurial attitude, this study adopted a modified questionnaire of EAO developed by Robinson *et al.* (1991). In addition, a modified questionnaire of entrepreneurial self-efficacy (ESE), developed by De Noble, Jung & Ehrlich (1999), was used to determine the students' entrepreneurial self-efficacy. The questionnaire administered in this study consisted of three parts. The first part included items about the respondents' background, such as age, gender,

and ethnic group. The second part which was on the EAO assessed the main components of attitude which included achievement, self-esteem, personal control, and innovation, using 75 items. The final part of the questionnaire measured the students' entrepreneurial self-efficacy (ESE) in six dimensions of coping with unexpected challenges, developing new product and opportunities, building an innovative environment, initiating investor relationship, defining core purpose, and developing critical human resources through 23 items.

A group of 116 vocational and technical school students from two secondary schools in the state of Selangor were selected to participate in a pilot study which was conducted in July 2008. The questionnaires were distributed by the researchers and the students were allowed to ask questions if they did not understand any of the items. Modification of the questionnaire was made to ensure accurate responses were obtained from the participants. A reliability test for entrepreneurial attitude items was conducted and the Cronbach α of .94 was obtained, indicating that this instrument was highly reliable. The reliability of self-efficacy construct also has a Cronbach α value of .89. The measurement of items in the survey questionnaire was based on 5 point Likert scale, with 1 demonstrating "strongly disagree" to 5 demonstrating "strongly agree". The mean score above 3.80 was considered high, 3.40-3.79 was considered moderate and below 3.39 was regarded as low perceptions. The data were analyzed using the descriptive and inferential statistics. As this study also attempted to investigate the correlation between all the dimensions of the ESE construct, the Davis (1971) convention was adopted in interpreting the magnitudes of the correlation coefficients, as follows: .70 and higher = very strong association, .50-.69 = substantial association, .30-.49 = moderate association, .10-.29 = low association, and 0.01-0.09 = regrettable association.

MEASURING ENTREPRENEURIAL ATTITUDE AND ENTREPRENEURIAL SELF-EFFICACY

Measuring entrepreneurial attitude has been one of the core focuses of entrepreneurship researchers for two main reasons. The first reason is to determine entrepreneurial intention and action through measuring entrepreneurial attitude (De Noble, Jung & Ehlrich, 1999; Ajzen, 2002; 1991) and second, to provide appropriate entrepreneurship education and training programmes to improve any aspects of entrepreneurial attitude, in which individuals scored low on it (Van Wyk & Boshoff, 2004). Robinson *et al.* (1991) developed a scale to measure entrepreneurial attitude orientation (EAO). The scale measures EAO in four subscales, namely, the need for achievement, personal control over behaviour, innovation, and self-esteem and three dimensions (affection, cognition, and conation) through 75 items. To validate the scale, the authors utilized two groups of undergraduate students, 54 entrepreneurs, and 57 non-entrepreneurs. The findings indicated that EAO scale was able to differentiate entrepreneurs from non-entrepreneurs, with an accuracy of 77 percent of cases.

Utilizing the EAO scale as the research instrument, Mohd Noor Mohd Sharrif & Mohammad Basir (2009) concluded that students of a Malaysian higher learning institution who minored in entrepreneurship were significantly different from non-minored entrepreneurship students in term of their self-esteem and personal control dimensions, but not in achievement, motivation and innovation. Harris & Gibson (2008) also studied entrepreneurial attitude orientation (EAO) among 216 students from small business programmes. The findings showed that the majority of the students scored high in three of the four EAO subscales, including innovation, need for achievement, and personal control but they were low in self-esteem. Kundu & Rani (2008) focused on the relationship between gender, family background, and EAO of 435 Indian Air force trainees. The results of the study revealed that female students scored higher in achievement

motivation. However, no significant difference was found between gender and overall EAO of students. There was also no difference between the male and female participants in term of family background.

In their study, Jumaat *et al.* (2004) focused on the association between demographic variables, such as age, gender, race, experience, and parents' education and Malay students' EAO and found no significant relationship between the demographic factors and participants' EAO. The authors further argued that despite the prevailing view that the Malay students had higher positive attitudes towards entrepreneurship, they could not find a significant difference between the Malay and non-Malay students in terms of their EAO. In sum, the relatively high entrepreneurial attitude among the young generation necessitates providing entrepreneurship education and training to exploit the high potential on entrepreneurship (Fuchs, Werner & Wallau, 2008). However, the findings of these studies are contradictory in the EAO subscales, which necessitate more investigation in this area.

Several measures have been developed for assessing entrepreneurial self-efficacy. In a recent review of the research measuring entrepreneurial self-efficacy, McGee *et al.* (2009) classified them on entrepreneurial self-efficacy into two groups. First, those research which measure a general perception of individuals' entrepreneurial ability through a limited number of items, and second, the research that consider entrepreneurial self-efficacy as a multi-dimensional construct and measure it through its subcomponents. Focusing on the specific tasks nascent entrepreneurs need to perform in the process of new venture creation, they confirmed the multi-dimensionality of entrepreneurial self-efficacy and identified five dimensions for the construct, which include searching, planning, marshalling, implementing people, and implementing-financial. Interestingly, they found empirical support to include the attitude toward entrepreneurship as an influential factor in stepping into new business ventures. The following sections are allocated to the research methodology and findings.

FINDINGS

The findings presented in Table 1 illustrate that in general, secondary school students are classified as having the attitudes consistent with entrepreneurs on self-esteem cognition, innovation affect, achievement affect as well as achievement cognition because the mean scores are above 4. Meanwhile, the students' mean scores are low for self-esteem behaviour (mean= 3.25). This indicates that students possess high self-esteem cognition in business, low in self-esteem behaviour, and moderate in self-esteem affect. The students' scored high on innovation affect and innovation cognition but moderate on innovation behaviour. The students also possessed high achievement in business attitude scores. As for personal control of business outcome attitude, students perceived high only on personal control behaviour which indicated that they possessed the attitude scores that are entrepreneurial. This high entrepreneurial attitude among secondary school students necessitates providing them with entrepreneurship education and training as suggested by Fuchs, Werner & Wallau (2008) because their scores on personal control affect and cognition are moderate.

Table 1 also illustrates that the Malay students generally have high positive attitude toward entrepreneurship. This may indicate that Malaysian government policies are effective to enhance *Bumiputras'* attitude toward entrepreneurship. Therefore, Malay students have high positive EAO on achievement, personal control, and innovation. In addition, the government has initiated many polices to develop independent, resilient, and competitive *Bumiputra* entrepreneurs as indicated in the Ninth Malaysian Plan. The results of this study indicate that the efforts have helped the Malays to realize the importance and necessity of entrepreneurship for socio-economic development of the nation. Since students' attitude towards entrepreneurship can be affected by learning and experience (Harris & Gibson, 2008), it can be concluded that undergoing commerce and entrepreneurship courses (which are included in the students' curriculum) may help the Malay students to improve their attitude towards entrepreneurship. Moreover, the education programmes may help the students to change their attitudes towards new venture creation, which was previously not common among the Malay community. Therefore, Malay

TABLE 1
The students' perceptions of the EAO

EAO Aspects	Mean	S.D	Mean interpretation
Achievement affect	4.03	.48	High
Achievement behaviour	3.81	.49	High
Achievement cognition	4.11	.47	High
Personal control affect	3.50	.63	Moderate
Personal control behaviour	3.83	.45	High
Personal control cognition	3.79	.57	Moderate
Self-esteem affect	3.50	.62	Moderate
Self-esteem behaviour	3.25	.58	Low
Self-esteem cognition	4.13	.54	High
Innovation affect	4.04	.48	High
Innovation behaviour	3.58	.43	Moderate
Innovation cognition	3.82	.48	High

students have benefited from the entrepreneurial education which was significantly emphasized in the Ninth Malaysia Plan (2006-2010).

Table 2 illustrates that the overall mean score for entrepreneurial self-efficacy of the Malay technical students is moderate. The students have moderately high perceptions toward developing new product and market opportunities, as well as initiating investor relationship, but they scored moderately low on coping with unexpected challenges. The other dimensions were perceived as moderate by the students.

The correlation analysis was conducted among the dimensions of entrepreneurial self-efficacy, and a high significant correlation was found between “developing new product and market opportunities” with “coping with unexpected challenges” ($r=.53$); “developing critical human resources” ($r=.67$); “defining

core purposes” ($r=.69$); “initiating investor relationship” ($r=.61$); and “building an innovative environment” ($r=.65$) as illustrated in Table 3.

DISCUSSION

The main purpose of this descriptive study was to determine the different aspects of the Malay secondary school students' entrepreneurial attitude and self-efficacy. The findings showed that the Malay secondary school students had a high attitude toward entrepreneurship in terms of self-esteem cognition, innovation affect, achievement affect as well as achievement cognition. Indeed, high entrepreneurial attitude indicates that the Malay vocational secondary school students favoured of becoming entrepreneurs or being self-employed, suggested by Kolvereid (1996). However, they scored low in self-esteem behaviour, suggesting that the Malay secondary vocational school students

TABLE 2
Students' entrepreneurial self-efficacy based on ethnics groups

ESE dimensions	Mean	S.D	Mean interpretation
Coping with unexpected challenges	3.57	.62	moderate
Developing new product and market opportunities	3.77	.53	moderate
Building an innovative environment	3.72	.58	moderate
Initiating investor relationship	3.78	.66	moderate
Defining core purpose	3.73	.63	moderate
Developing critical human resource	3.68	.63	moderate

TABLE 3
The correlation between developing new products and market opportunities with all other dimensions of ESE

Dimensions of ESE	Developing new product and market opportunities	Degree of association
Coping with unexpected challenges	.53*	Substantial
Building an innovative environment	.65*	Substantial
Initiating investor relationship	.61*	Substantial
Defining core purpose	.69*	Substantial
Developing critical human resource	.65*	Substantial

*sig at <.01

might lack self confidence and entrepreneurial competencies. Based on the findings, the Malay secondary school students generally need to improve in the area of perceived self-esteem in business so as to improve their self-confidence and related competencies in business affairs. This is possible through more purposive entrepreneurship education as suggested by Chen, Greene & Crick (1998).

Furthermore, the findings also indicate that Malay secondary school students have moderate perceptions on all the dimensions related to entrepreneurial self-efficacy. This finding concurs with those of De Noble, Jung & Ehlich (1999), i.e. non-entrepreneurial students scored 3.87 on the overall entrepreneurial self-efficacy (ESE) constructs. The students in this study comprised of those who did not take specific entrepreneurship courses as parts of their curriculum. With moderate entrepreneurial self-efficacy, the students may not have enough interest, motivation, and capability to be engaged in entrepreneurial activities and face the challenges in the process of venture creation, because only those who have strong beliefs in their entrepreneurial capabilities get engaged in entrepreneurial activities and are able to face the challenges associated with a new business creation (Chen, Greene & Crick, 1998).

In more specific, the findings showed that students scored low in terms of 'developing new product or market opportunities'. This shows that they lack skills related to opportunity recognition, which is particularly important in creating an entrepreneurial venture. In addition, the students scored moderately low in 'coping with unexpected challenges'. This indicates that the students perceive themselves as less capable of dealing with the ambiguity and uncertainty involved in real life of entrepreneurs, such as lack of information, equivocal messages, and rejection (De Noble, Juny & Pearson, 2000). As for the students' perception on all dimensions of ESE, it was found that the Malay students scored significantly high. This may be attributed to Malaysia's poverty eradication strategy which has currently focused on human resource development and quality of life

improvement. The strategy may improve the entrepreneurial awareness among Malays. In addition, it may also be related to the impacts of a systematic training in a subject called 'Living Skills' which include entrepreneurship elements which are taught during lower secondary years in Malaysian school system. The activities in the subject might have enhanced the Malay students' awareness about the importance and necessity of entrepreneurship for their community. Moreover, this training skill subject might have improved students' knowledge about entrepreneurship because content knowledge is important for individuals to gain confidence to consider entrepreneurship as a career alternative.

Thus, the Malays who had previously lacked the motivation to become entrepreneurs have started to develop their enthusiasm and confidence to step into entrepreneurship once they have realized the values of entrepreneurship for their nation's development. However, the mean score of the students' entrepreneurial self-efficacy is only moderately high. It is urgently necessary to provide the technical secondary school students with entrepreneurship education programmes and activities to improve their entrepreneurial self-efficacy, and therefore increase the number and quality of the students who have the ability and motivation to start-up their own venture (Chen, Greene & Crick, 1998). Furthermore, the findings of this study concur with that of Zaidatol Akmaliah *et al.* (2005; 2002) who found that entrepreneurial attitude was generally positive among the secondary school students and they scored high on entrepreneurial potential.

The analysis of correlation between the dimensions of ESE declared that the dimension of 'coping with unexpected challenges' had a significant positive correlation with 'developing new product and market opportunities'. Thus, the stronger the students' perceptions of their capabilities to cope with unexpected challenges, the better their skills to recognize opportunity for venture creation are. Opportunity recognition is an important skill for an individual considering to pursue an entrepreneurial career (Krueger & Brazeal, 1994). Moreover, building an

innovative environment had a significant positive correlation with 'developing new product and market opportunities', which indicates that the better the perception of students regarding innovative environment, the higher their skills on developing new opportunities. This dimension is important because innovative environment facilitates risk-taking and innovation (Chen, Greene & Crick, 1998), and thus, the more students believe that they can set such an environment, the better will their ability to develop new opportunities will be. Furthermore, innovation and risk taking differentiate entrepreneur from managers.

IMPLICATIONS OF THE FINDINGS AND AGENDAS FOR FURTHER STUDIES

This study contributes to the body of knowledge and empirical studies in many ways. First, it provides an overview of entrepreneurial potential among the Malay secondary school students. Moreover, it also suggests a better understanding of entrepreneurial attitude and self-efficacy among the Malay younger generation. Furthermore, it portrays a clearer picture of the different aspects of students' entrepreneurial attitude and self-efficacy by measuring the different aspects of the constructs, based on which, more purposive and effective entrepreneurship education and training programmes can be developed. More specifically, the high entrepreneurial attitude among the Malay technical secondary school students necessitates a long-term planning and policy making to facilitate new venture creation for younger generation through providing the funds and infrastructures, as well as removing the impediments in the path to become entrepreneurs. This high entrepreneurial attitude also demands more systematic, comprehensive, and continuous approach to entrepreneurship education and training (Chen, Greene & Crick, 1998) to equip the Malay students with entrepreneurial skills and capabilities. The findings may also be insightful for policy makers at the Malaysian Ministry of Education to support and promote the establishment of formal

courses in entrepreneurship in all the vocational and technical education programmes so as to provide a better entrepreneurial environment and facilitate new business creation in Malaysia. According to Valera & Jimenz (2001), higher investment in entrepreneurial courses and training will result in higher new venture creation rates among students.

Additionally, based on the findings of this study, the technical secondary school students in Malaysian have moderate entrepreneurial self-efficacy. Thus, more learning opportunities should be provided to motivate and enhance these students' ability to start own businesses. More importantly, entrepreneurship education programmes should provide various learning opportunities for the students to develop different dimensions of their entrepreneurial self-efficacy. This is possible by involving students in various entrepreneurial activities and learning opportunities, such as developing a business plan, running a simulated or real business, and many others. All these may increase students' confidence and improve their self-esteem to become entrepreneurs in the future.

However, more research on students' entrepreneurial attitude and self-efficacy still need to be undertaken, specifically those determining the association between constructs and entrepreneurial intention. Moreover, further studies should be done to determine if entrepreneurship education and training programmes enhance Malay students' entrepreneurial attitude and self-efficacy. In addition, different aspects of entrepreneurial attitude and self-efficacy can also be agendas for further investigations.

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APPENDIX 1

Vocational skills training subjects offered by Malaysian Ministry of Education: Ministry of Education

Vocational skills training program subjects

Domestic Construction (Home Repairs)

Furniture Making

Sign Design

Domestic Plumbing

Domestic Wiring

Arc and Gas Welding

Automotive Servicing

Vehicle Panel Beating and Painting

Servicing of Domestic Electrical Equipment

Servicing Air Conditioning and Cooling Equipment

Fashion Design and Sewing

Food Catering and Presentation

Facial Care and Hairstyling

Food Processing

Basic Interior Decoration

Early Childcare and Education

Geriatrics

Landscaping and Nursery

Aquaculture and Animals (Pets)

Food Growing

Multimedia Production

Computer Graphics

