

Assessing Entrepreneurial Intentions Among Malaysian Polytechnic Students: The Case of Engineering Students

Zarina Syuhaida Shaarani¹

¹ Politeknik Tuanku Sultanah Bahiyah, Civil Engineering Department, 09000 Kulim, Kedah.

ARTICLE INFO

Article history:

Received : June 2015

Accepted : August 2015

Available online : January 2017

Keywords:

Entrepreneurial intentions, engineering students, motivations, barriers, job aspiration

ABSTRACT

Background: Our students today are tomorrow's potential entrepreneurs. This may explain the reason of entrepreneurship education has been aggressively implemented in tertiary education level. However, entrepreneurial intention among Malaysian Polytechnic engineering students is remain unknown due to the lack of research in the subject matter. **Objective:** A survey had been conducted to investigate the relationship between family business background, own business experience and entrepreneurship programs towards the employment aspiration among engineering students. Besides, this research is to determine the motivations and barriers to become entrepreneurs. **Results:** The results indicate significant correlation between family business background and own business experience towards job aspiration but insignificant correlation between entrepreneurship program and job aspiration. Besides, perceived benefits in self-realisation are the main motivators to be entrepreneurs and perceived difficulties in financial issues are the main barriers that impediment students' intention to be entrepreneurs. **Conclusion:** The findings could be a basis to develop entrepreneurial programs or curriculum especially designed for engineering students as they are expected to find business in innovative and dynamic area, thus promoting significant economic growth.

INTRODUCTION

The era of 'secure' employment for university students is over. The luxury thoughts of university graduates are the elite and intelligent group in the society whom can easily acquire a job upon graduation has no longer reflects the realities of today's employment world [1]. The scarcity of job supply increase the competitiveness in job environment, hence one needs to compete to secure a job as job supply is limited compared to the demand.

Our students today are tomorrow's potential entrepreneurs. This may explain the reason of entrepreneurship education has been aggressively implemented in tertiary education

level. Krueger and Brazeal [2] argued that one is not born an entrepreneur but entrepreneur needs to be developed as an entrepreneur. This body of knowledge encourages academicians and experts in the field to investigate farther into the matters and try to recommend the best practice to produce more entrepreneurs among the graduates. However, as the entrepreneurship course has been compulsory to all polytechnic students, the entrepreneurial intention among Malaysian polytechnic engineering students remains unknown due to the absence of research in the matters.

This research is to explore the entrepreneurial intention among the polytechnic engineering students. To achieve this, the correlation among entrepreneurship program, own business experience, business family background and job

aspiration is established. Apart from that, their motivations and barriers to become an entrepreneur are investigated in effort to understand the dilemma mingling around the students' mind regarding the matters.

LITERATURE REVIEW

Entrepreneurship is regarded as one of the best economic development strategies to develop country's economic growth and sustain its competitiveness in the globalisation era [3]. It is proven to have positive impacts on many countries as a catalyst that create wealth, job opportunities, firm survival and technological change [4] as well as a major engine driving many nations' economic growth, innovation and competitiveness [5].

Fostering entrepreneurship has become one of the topics of priority in public policy. In the era of increasingly concern about technological advance and strong international competition, entrepreneurial activities are regarded as a driving force of innovation [6]. Partly, the initiatives to promote entrepreneurship targeted on students as future entrepreneurs. Entrepreneurship programs for students in engineering disciplines should be designed accordingly as graduates in technical disciplines are expected to found companies in dynamic and innovative areas, thus promoting significant economic growth and employment opportunities [7].

The influence of entrepreneurship program, own business experience and family business background

Many research suggested that the individual inclination towards entrepreneurship has been influenced by the demographic as well as the family business background [8],[9]. A positive influence brought by family as well as personal own experience about entrepreneurship contribute to higher entrepreneurial inclination. Drennan, Kennedy and Renfrow [10] argued that those who reported a positive view of their family business experience perceived starting a business are desirable and feasible.

Studies show that entrepreneurship education has been recognised as one of the determinants that could influence students' career decisions [11]. Entrepreneurship education focused in changing students' behaviours, attitude and even intentions that makes them understand entrepreneurship, to be entrepreneurial and ultimately to become an entrepreneur whom

form a new business as well as creating job opportunities [3].

The motivations of becoming an entrepreneur

Lee et al. [12] pointed out that entrepreneurship education programs should be consistent with the national context in which they are offered. Different nationality has different motivations to become an entrepreneur [13]. To accomplish this, it is important to study students' motivations and perceived benefits of becoming an entrepreneur. The factors that drive their interests should be the basis for the design of the entrepreneurship education program. The knowledge in this matter should be inserted to make the entrepreneurship program more meaningful and able to ignite students' interests.

Generally, people perceptions on their work, opportunities and costs will have important impact on decisions [14]. In lieu to this, the propensity for entrepreneurial venture is highly influenced by the perceived benefits of becoming an entrepreneur.

The barriers of becoming an entrepreneur

The perceived barriers of becoming an entrepreneur among students is an issue that receive lack of attention from academician due to the scarcity of literatures on the matter. Zwan et al. [15] grouped the impediments to self-employment among undergraduates from two Spanish universities in three categories namely perceived financial barriers to start a business, perceived administrative complexities to start a business and individual's fear of business failure. This study found little evidence that the relationship between entrepreneurial learning and the probability of being self-employed is mediated by any of the three impediments towards entrepreneurship.

METHODOLOGY

Two polytechnics namely Politeknik Tuanku Sultanah Bahiyah (PTSB) and Politeknik Seberang Perai (PSP) had been chosen to participate in the survey. The questionnaire had been administered to the students at random.

311 usable responses from engineering students were analysed. The reasons for selecting engineering students as the context of this research were twofold. Engineering students'

behaviours are interesting as their technical training gives them the potential to start high-growth technology ventures. Apart from that, majority of the Polytechnic Malaysia graduates are from the engineering programs.

Statistical Software for Social Sciences (SPSS) has been used to analyse the data. Parameters namely frequency, percentage, mean, standard deviation and correlation are widely used in the analyses to ease the understanding of the information delivered in the research.

RESEARCH FINDINGS

Respondents Profile

86.2% of the respondents were from PTSB and 13.8% were from PSP. Majority of the response were from Mechanical Engineering Department (37.9%), Electrical Engineering Department (33.1%) and the least were from Civil Engineering Department (28.9%). However, the highest response (19.6%) was from Diploma in Civil Engineering students followed by Diploma in Mechanical Engineering students (17.0%) and majority was from Semester 5 students (29.3%). Apart from that, the response comprises of 54.7% male, 45.3% female and majority are Malay respondents (84.2%).

Table 1: Respondent's Demographic

Item	Variable	Frequency	%
Polytechnic	PTSB	268	86.2
	PSP	43	13.8
	Total	311	100
Department	Dept. of Civil Eng.	90	28.9
	Dept. of Electrical Eng.	103	33.1
	Dept. of Mechanical Eng.	118	37.9
	Total	311	100.0
Program	Dip. in Civil Eng.	61	19.6
	Dip. in Land Surveying	29	9.3
	Dip. in Electrical Eng.	44	14.1
	Dip. in Electronic Eng (Communication)	51	16.4
	Dip. in Electronic Eng (Computer)	8	2.6
	Dip. in Mechanical Eng.	53	17.0
	Dip. in Mechanical Eng. (Manufacturing)	26	8.4
	Dip. in Mechatronic Eng.	23	7.4
	Dip. in Mechanical Eng. (Loji)	5	1.6
	Dip. in Mechanical Eng. (Textile)	11	3.5
	Total	311	100.0
Semester	One	25	8.0
	Two	47	15.1
	Three	55	17.7
	Four	42	13.5
	Five	91	29.3
	Six	41	13.2
	Final Semester	10	3.2
	Total	311	100.0
Gender	Male	170	54.7
	Female	141	45.3
	Total	311	100.0
Ethnic	Malay	262	84.2
	Chinese	14	4.5
	Indian	33	10.6
	Others	2	0.6
	Total	311	100.0

Employment Aspiration

Out of 311 responses, majority of 61.7% preferred to work with organisation as a salaried employee, only 38.3% aspired to be self-employed.

Table 2: Employment Aspiration

Employment	Frequency	Percentage
Self-Employment	119	38.3
Working with organisation	192	61.7

The influence of family business, own business experience and entrepreneurship program on employment aspiration.

Pearson Chi-Square test indicates significant difference in business family background [$\chi^2 (1, N=311) = 12.198, p<0.05$] and own business experience [$\chi^2 (1, N=311) = 18.124, p<0.05$] towards employment aspiration. As tested further, correlation test shows that the correlation is low; $r=.198, p<.05$ and $r=.241, p<.05$ respectively. Somehow, chi-square test indicates that there is no significant difference between entrepreneurship program and employment aspiration among engineering students.

Table 3: The influence of family business, own business experience and entrepreneurship program on employment aspiration

Variable		Self-employ	working with organization	Chi-Square test / Correlation
Family business	Yes	37.8% (45)	19.8% (38)	$\chi^2 (1, N=311) = 12.198, p<0.05$ (significant) $r = .198, p< .05$
	No	62.2% (74)	80.2% (154)	
Own business experience	Yes	28.6% (34)	9.9%(19)	$\chi^2 (1, N=311) = 18.124, p<0.05$ (significant) $r = .241, p< .05$
	No	71.4% (85)	90.1% (173)	
Entrepreneurship Program	Yes	54.6% (65)	51.0%(98)	$\chi^2 (1, N=311) = .378, p>0.05$ (not-significant)
	No	45.4% (54)	49.0%(94)	

The Motivations to Become Entrepreneur

Table 4 shows the mean scores of the motivation attributes. The mean average shows that perceived benefits in self-realisation (Grouped mean =4.11, sd=0.93) is the most important motivation that drive engineering students to become entrepreneurs, followed by entrepreneurial attitude (Grouped mean=4.09, sd=0.95). Two attributes that scores the highest are 'increase my life quality' (mean=4.17, sd=0.946) and 'positive challenges for myself' (mean=4.13, sd=0.930)

Table 4: The Motivations to Become Entrepreneur

Group	Attribute	Mean	SD
Autonomy	Enable me managing my own employees	4.09	.91
	Authority to make decision	4.08	.97
	Able to control and monitor my own financial	4.08	.97
	Freedom in working hours	4.07	.91
	To be the boss of my own	4.07	.99
	Being the head of my organisation	4.06	.96
	Total involvement in my own business	4.03	.96
Grouped Mean		4.07	0.95
Self-Realisation	Increase my life quality	4.17	.95
	Opportunity to earn high income	4.12	.90
	Opportunity to earn more than normal monthly salary	4.12	.91
	Enable me to build my own wealth	4.10	.93
	High status	4.03	.95
Grouped Mean		4.11	0.93
Entrepreneurial Attitude	Positive challenges for myself	4.13	.93
	Able to create job opportunities	4.08	.96
	The chance to implement my own idea.	4.08	.97
	The opportunity to create something new.	4.06	.93
	Grouped Mean	4.09	0.95

*Cronbach's Alpha = .968

Barriers to Become Entrepreneur

Financial issues has been the main barriers in becoming an entrepreneur (Grouped mean =4.29, sd=0.89) followed by entrepreneurial incompetence (Grouped mean=4.26, sd=0.89). Besides, barriers namely 'lack of initial capital' (mean=4.34, sd=0.92), 'economic instability' (mean=4.31, sd=0.87) and 'very high risks' (mean=4.31, sd=0.97) are identified as the main obstacles to become an entrepreneur among engineering students in polytechnics.

Table 5: The Barriers to Become Entrepreneur

Group	Barrier	Mean	SD
Financial Issues	Lack of initial capital	4.34	.92
	Economic Instability	4.31	.88
	Uncertainty on incomes	4.26	.88
	Concern over fiscal fees such as taxes, legal fees and other fees.	4.25	.88
	Grouped Mean	4.29	0.89
Entrepreneurial Incompetence	Very high risks	4.31	.97
	Lack of entrepreneurial competency	4.27	.92
	Lack of entrepreneurship knowledge	4.27	.87
	Lack of knowledge in business and current market scenario	4.26	.87
	Lack of business ideas	4.25	.86
	Lack of self-confidence to do business	4.23	.86
	Concern over long and irregular working hours	4.23	.88
	Fear of business failure	4.23	.92
	Grouped Mean	4.26	0.89
Administrative complexities	Lack of experience in business management and accounting	4.26	.81
	Concern over paper works and bureaucracy in business	4.22	.91
	Grouped Mean	4.24	0.86
Support for entrepreneurs	Lack of support in starting a business	4.27	.82
	Lack of support in getting business opportunities	4.25	.88
	Lack of help for new entrepreneurs	4.21	.87
	Lack of support in legislation and counselling to start a business	4.21	.90
	Lack of support from peers, friends and family.	4.08	1.03
	Grouped Mean	4.20	0.90

*Cronbach's Alpha = .966

DISCUSSION

This research investigates three issues regarding the entrepreneurial intentions among engineering students in polytechnic: Do family business background, own business experience and entrepreneurship program influenced their employment aspiration? What are the motivation attributes that encourage engineering students to become entrepreneurs? And, what are the barriers that impeded their intentions to be entrepreneurs? Malaysian Polytechnics have been actively producing the supply of semi-skilled technical manpower to

support Malaysian industries and economic growth. However, as the job market is getting limited and very competitive, entrepreneurship is one of the solutions to the dilemma of employability.

The aspiration to be an entrepreneur is considered as 'substantial' among engineering students. Only 38.3% interested to be self-employed while majority of 61.7% is aspired to work with an organisation. Even this finding is lower than Samuel et al. [16] that found 70.6% of Sunyani Polytechnic marketing students are aspired to set up their firms after graduation, the aspiration could be influenced by the study field of the target sample. However, Luthje and Franke [17] found that 54.6% MIT engineering students planned to be self-employed after graduation. This result could be associated with the objective of the development of Malaysian Polytechnics which is to supply semi-skilled manpower for the Malaysian industries and the different in level of academic for the respondents. Hence, the students are sufficiently trained in technical aspects according to the industries needs rather than equip them with the entrepreneurial skills and exposures.

Statistically, there is significant difference between employment aspiration and students with family business background [$\chi^2(1, N=311) = 12.198, p < 0.05$] and students with own business experience [$\chi^2(1, N=311) = 18.124, p < 0.05$]. As tested further, even the correlation is low respectively ($r = .198, p < .05$ and $r = .241, p < .05$), it shows that family traits and/or own experience in entrepreneurship influence the intention to be entrepreneur among engineering students. These findings are consistent with Kirkwood [9]. Family entrepreneurial culture and traits perhaps influenced the children's decision on their future career. Besides, having previous experience in business is an advantage as they have better knowledge about business creation as well as good networking in helping them to acquire needed resources. These resources could help them confidently ventured into business in the future. On the other hand, interestingly, the efforts to insert entrepreneurship programs either formally as mandatory course or as extra-curricular programs do not have significant impact on engineering students' employment aspiration. This result contradicts the finding of Keat and Meyer [17] that found positive correlation between entrepreneurship programs and entrepreneurial inclination among Malaysian university students. Again, this could be

explained by the different in education levels received by the students in Malaysian polytechnics and Malaysian universities which are diploma and degree respectively. As mentioned by Robinson et al. [18], different populations differ in a variety of important entrepreneurial characteristics which in turn would lead to inconsistent results.

The motivations to become entrepreneurs among engineering student in Malaysian polytechnics are interesting to explore. Two attributes that score the highest are '*increase my life quality*' (mean=4.17_{sd:0.95}) and '*positive challenges for myself*' (mean=4.13_{sd:0.93}). Perceived benefits in self-realisation (grouped mean: 4.11_{sd:0.93}) especially in financial aspects are the main attributes that ignite the interests of engineering students to become entrepreneurs, followed by entrepreneurial attitudes (grouped mean=4.09_{sd:0.95}) and perceived benefits in autonomy (grouped mean=4.07_{sd:0.95}). These findings are consistent with Giacomini et al [13] that found 'pursuit of profit and high status' was the main domain that motivated the students in India, US and China to venture in business. This perception might be associated with the entrepreneurship programs that involved successful entrepreneurs and the motivation talks given by them. In lieu with Souitaris et al. [19] results that emphasize the impact of 'inspiration' on entrepreneurial motivations, this inspiration could come from any sources such as family, lecturers, or perhaps successful entrepreneurs and wealth is the tangible, physical evidence that inspired them to venture into the same career path.

First, it appears that the domain of financial issues (grouped mean=4.29_{sd:0.89}) are the main concern over starting a business, with 'lack of initial capital' (mean=4.43_{sd:0.92}) and 'economic instability' (mean=4.31_{sd:0.87}) are the main barriers among the engineering students. The second domain that impediment the intention to become entrepreneurs is 'entrepreneurial incompetence' (grouped mean=4.26_{sd:0.89}), followed by administrative complexities' issues (grouped mean=4.24_{sd:0.86}) and 'lack of support' issues (grouped mean=4.20_{sd:0.90}). This result is consistent with Giacomini et al. [13] that mentioned the financial matters and lack of entrepreneurial competency are the important barriers among Indian and US students but not to Chinese, Spanish and Belgian students. The concern over the financial issues to venture in business might due to their status as students and they do not have the exposure on financial aids available to potential entrepreneurs. Apart

from that, perceived lack of entrepreneurial competencies among engineering students might due to the lack of exposure on entrepreneurial activities, hence they could not reveal or recognise their true potentials in entrepreneurship.

CONCLUSIONS AND RESEARCH IMPACT

This research is to explore the entrepreneurship intention among Malaysian Polytechnic engineering students. 38.3% aspired to be self-employed while family business background and own business experience have significant influence on their employment aspiration. Self-realisation domain regarding wealth and high status are the main motivations to be entrepreneurs and financial issues are the main obstacles that impediment the intentions to be entrepreneurs.

These results are anticipated to have certain implication to polytechnics and students alike. It is polytechnic's role to intensify the promotion of entrepreneurship among engineering students. The body of knowledge provided in this research could be hints on how to develop the entrepreneurship curriculums or programs especially designed for engineering students as they are equipped with technical expertise and thus, able to confidently venture in business. The information on motivations attributes and perceived barriers could be manipulated in order to alleviate students' pessimism towards being entrepreneurs.

REFERENCES

- [1] Seet, P.S. and L.C., Seet., 2006. Making Singapore university graduates more entrepreneurial: Has entrepreneurship education helped? 51st ICSB World Conference Melbourne, Australia.
- [2] Krueger, N.F. and D.V., Brazeal, 1994. Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice*, 29(5): 577-597.
- [3] Venkatachalam, V.B. and A.A.Waqif, 2005. Outlook on integrating entrepreneurship in management education in India. *Decision*, 32 (2): 57-71.

- [4] Gurol, Y. and N. Atsan., 2006. Entrepreneurial characteristics amongst university students: some insights for entrepreneurship education training in Turkey. *Education and Training*, 48(1): 25-38.
- [5] Kuratko, D.F. and R.M., Hodgetts., 2004. *Entrepreneurship: Theory, Process and Practice*. Ohio, US, Thompson Learning.
- [6] Drucker, P.F. 1999. *Innovation and entrepreneurship*, 2nd edition, Oxford: Butterworth-Heinemann
- [7] Roberts, E.B., 1991. *Entrepreneurs in high technology: Lesson from MIT and beyond*. Oxford: Oxford University Press.
- [8] Smith, D.T., 2005. Developing self-employment among African Americans: The impact of household social resources on African American entrepreneurship. *Economic Development Quarterly*, 19(4): 346-355.
- [9] Kirkwood, J., 2007. Igniting the entrepreneurial spirit: Is the role parents play gendered? *International Journal of Entrepreneurial Behaviour and Research*, 13(1): 39-59.
- [10] Drennan, J., J. Kennedy and P. Renfrow., 2005. Impact of childhood experiences on the development of entrepreneurial intentions. *International Journal of Entrepreneurship and Innovation*. 6(4): 231-238.
- [11] Peterman, S. and J. Kennedy., 2003. Enterprise education: influencing students' perceptions of entrepreneurship, *Entrepreneurship Theory and Practice*. 28(2): 129-144.
- [12] Lee, S.M., S.B. Lim and R.D. Pathak., 2009. Culture and entrepreneurial orientation: a multi-country study. *International Entrepreneurship and Management Journal*, doi: 10.1007/s11365-009-0117-4.
- [13] Giocamin, O., F. Janssen., M. Pruett., S.R. Shinnar., F. Llopis and B. Toney., 2011. Entrepreneurial intentions, motivations and barriers: differences among Americans, Asians and European Students. *International Entrepreneurship Management Journal*, 7: 219-238.
- [14] Phan, P.H., P.K. Wong and C.K. Wang., 2002. Antecedents to entrepreneurship among university students in Singapore: Beliefs, attitudes and background. *Journal of Enterprising Culture*, 10(2): 151-174.
- [15] Zwan, P.V.D., P. Zuurhout and J. Hessels., 2013. Entrepreneurship education and self-employment: the role of perceived barriers. *Scientific Analysis of Entrepreneurship and SMEs*, 1-25.
- [16] Samuel, Y.A., K. Ernest and J.B. Awuah., 2013. An assessment of entrepreneurship intention among Sunyani Polytechnic marketing students. *International Review of Management and Marketing Journal*, 3(1): 37-49.
- [17] Keat, O.Y and D. Meyer., 2011. Inclination towards entrepreneurship among university students: an empirical study of Malaysian university students. *International Journal of Business and Social Science*, 2(4): 206-220.
- [18] Robinson, P.B., J.C. Huefner and K.H. Hunt., 1991. Entrepreneurial research on student subjects does not generalize to real world entrepreneurs. *Journal of Small Business Management*, 29(2): 43-50.
- [19] Souitaris, V., S. Zerbini and A. Al-Laham., 2007. Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22: 566-591.