

REFEREED EDITION - ISSN 1176-8592

EDITORS: ROSEL FONACIER & JENS MUELLER

VOLUME III, ISSUE 2, SEPTEMBER 2007
© 2007, JOURNAL OF ASIA ENTREPRENEURSHIP AND SUSTAINABILITY
NO REPRODUCTION OR STORAGE, IN PART OR IN FULL, PERMITTED WITHOUT
PRIOR PERMISSION.

EDITORS@ASIAENTREPRENEURSHIPJOURNAL.COM

RELATIONSHIP BETWEEN PSYCHOLOGICAL CHARACTERISTICS AND ENTREPRENEURIAL INCLINATION: A CASE STUDY OF STUDENTS AT UNIVERSITY TUN ABDUL RAZAK (UNITAR)

Mohar Yusof Manjit Singh Sandhu Prof. Dr. Kamal Kishore Jain

University Tun Abdul Razak, Malaysia
Faculty of Business Administration
UNITAR Study Centre, Jalan SS6/12
Kelana Jaya, 47301 Petaling Jaya
Selangor, MALAYSIA
603-78092052 (Telephone) 603-78801744 (Fax)

mohar@unitar.edu.my

Abstract: Interest in entrepreneurship is intense in many parts of the world. For developed economies, entrepreneurial activity (new venture formation) is a means of revitalizing economy, a way of coping with unemployment problems, a potential catalyst and incubator for technological progress, product and market innovation. For economies of developing countries, entrepreneurship is seen as an engine of economic progress, job creation and social adjustment. Thus, small business growth/new business formation is widely encouraged by national economic policies to stimulate economic growth and wealth creation. As Malaysia entered the twenty first century, interest and concerns on the subject of entrepreneurship heightened among others by the government's enormous funding allocation towards the promotion of entrepreneurship especially for small and medium enterprises, the issue of graduate unemployment which has risen to approximately sixty thousand (60,000) according to a Bernama report and the attitude of current graduates who are seen to be too pampered and dependent on the government and private organizations for employment. It is time to further examine whether our existing university students are inclined towards entrepreneurship. This study investigates the degree to which UNITAR students are inclined towards entrepreneurship. 361 students from three faculties at both graduate and undergraduate levels were surveyed to examine their entrepreneurial inclination and also to look into the relationship between certain psychological characteristics and entrepreneurial inclination. Further analysis is reported and recommendation for future research has been put forth in this paper.

Key words: Entrepreneurship, Entrepreneurial Inclination, Entrepreneurship Education

1. INTRODUCTION

Back ground to the research

Interest and research in entrepreneurship and entrepreneurship education have been growing over the past few years (Hatten and Ruhland, 1995; Green *et al.*, 1996; Outcalt, 2000; Alstete, 2002; Morrison, 2000; Rohaizat and Fauziah, 2002; Klapper, 2004; Frank *et al.*, 2005; Gurol and Atsan, 2006). One factor that has contributed to this is the importance of entrepreneurship in boosting economic growth and development. However, the Global Entrepreneurship Monitor (GEM) study (Minniti *et al.*, 2005) reported that a strong variation existed across countries in terms of frequency and quality of entrepreneurial activity. Middle-income countries tend to exhibit higher percentages of individuals starting a business compared to higher-income countries. For example, some countries such as Venezuela (25%), Thailand (20.7%), and New Zealand (17.6%), exhibit very high rates of individuals participating in early-stage entrepreneurial activity. On the other side of the spectrum are countries with very low participation rates, such as Hungary (1.9%), Japan (2.2%) and Belgium (3.9%). Malaysia did not participate in this study.

In Malaysia, the government has created enormous amount of funding towards the promotion of entrepreneurship especially for small and medium-sized enterprises. However, the uptake is still slow. In fact, over the last few years, graduate unemployment has become a major problem. There were about 60,000 unemployed graduates in 2005 according to a Bernama report. In addition, current graduates are too pampered and dependent on the government and the private sector for employment. To resolve these issues, a reexamination of our higher education system is needed to find out the stumbling blocks that hinders the growth of entrepreneurship. Now is also the time to further examine whether our existing university students are inclined towards entrepreneurship.

There is not much research available in Malaysia in the area of entrepreneurship. This may be due to the fact that this field only began to be emphasized by the government in the mid 90s when a special ministry for entrepreneurs, the Ministry of Entrepreneur Development, was created in 1995. Most of the existing researches on entrepreneurship in Malaysia tend to focus more on the field of entrepreneurship in general; the success factors of actual entrepreneurs and to a certain extent characteristics of entrepreneurs (Nor, Ezlika and Ong, 2000; Nor Aishah and Yufiza, 2004; Ariff and Syarisa Yanti, 2002; Noor and Ali, 2004; Radzali, 1991). The empirical research on students' perception or inclination towards entrepreneurship is also limited and focuses more on factors influencing entrepreneurship inclination rather than examining other personal factors (Kamariah, Yaacob and Wan Jamaliah, 2004).

This paper intends to close the existing gap by examining the relationship between psychological characteristics and entrepreneurial inclination among students in University Tun Abdul Razak. This will help in developing a clear cut policy to promote

entrepreneurship at the national level so that our future generations, in general, and new graduates, in particular, are able to move to a new level by becoming entrepreneurs. Specifically, this study will focus on the following research questions:

- 1. What is the relationship between psychological characteristics and entrepreneurial inclination among students in University Tun Abdul Razak?
- 2. What is the effect of the psychological characteristics on entrepreneurial inclination?

About Unitar

University Tun Abdul Razak (UNITAR) is the nation's first e-learning, MSC-status and ISO 9001:2000-certified private university in Malaysia. UNITAR offers the best combination in its teaching and e-learning methods by combining face-to-face classes with the effective use of web-based courseware and online tutorials. UNITAR currently offers 28 academic programs, 11 of which are accredited by the National Accreditation Council (LAN). All UNITAR programmes are approved by the Private Education Department. The programs range from foundation and diploma up to doctorate degrees in fields such as information technology, business administration, humanities and social sciences, and hospitality & tourism management. (www.unitar.edu.my)

2. LITERATURE REVIEW

Interest in entrepreneurship is intense in many parts of the world. This prolonged and heightened interest in entrepreneurship is prompted by several factors. First, for developed economies, entrepreneurial activity (new venture formation) is a means of revitalizing economy and a way of coping with unemployment problems. Moreover, it is accepted as a potential catalyst and incubator for technological progress, product and market innovation (Mueller and Thomas, 2000; Jack and Anderson, 1999). However, it has a more critical role for economies of developing countries since entrepreneurship is seen as an engine of economic progress, job creation and social adjustment. Thus, small business growth/new business formation is widely encouraged by national economic policies to stimulate economic growth and wealth creation.

Despite the substantial interest and research in entrepreneurship and entrepreneurs, defining and understanding both remain difficult and challenging (Mitton, 1989). From a survey of the entrepreneurship literature, Cunningham and Lischeron (1991) have identified six different major schools of thought. The existence of these schools of thought demonstrates that there is very little consensus on what entrepreneurship is and what an entrepreneur does. The 'great person school' views an entrepreneur as a person who is born with an intuitive ability – a sixth sense – and traits such as vigor, energy, persistence and self-esteem. The classical school finds that the central characteristic of entrepreneurial behavior is innovation. The management school describes entrepreneurs as persons who organize, own, manage and assume the risk of an economic venture. The leadership school views entrepreneurs as leaders of people who have the ability to adapt their style to the needs of people. In contrast, the intrapreneurship school posits that

entrepreneurial skills can be useful in complex organizations through the development of independent units to create, market and expand services.

This study adopts the psychological characteristics school of thought that views entrepreneurs as individuals who have unique values, attitudes and needs which drive them. It is based on the assumption that people behave in accordance with their values and behavior results from attempts to satisfy needs. Therefore, this school of thought focuses on personality/psychological factors and characteristics associated with entrepreneurship which have received a great deal of attention such as need for achievement, locus of control, risk taking, tolerance of ambiguity, self-confidence (Begley and Boyd, 1987; Brockhaus, Sr. and Horwitz, 1986) and innovativeness (Schumpeter, 1934). According to Connie *et al.* (2005), personality research plays a critical role in the investigation of the entrepreneurial personality and has re-emerged as an important area of interest (Rauch and Frese, 2000) with the individual as the unit of analysis (Korunka *et al.*, 2003).

These characteristics are included in the study because they are the most frequently enumerated as entrepreneurial characteristics in the literature and evidences indicating association between them and entrepreneurship have been widely documented (Koh, 1996). For example, three personality constructs have emerged as "classic" characteristics associated with the entrepreneurial personality: internal locus of control, high need for achievement and a moderate risk-taking propensity (Korunka *et al.*, 2003).

Bygrave (1989) presented a model that includes need for achievement, internal locus of control, tolerance for ambiguity and risk-taking propensity as vital components. Similarly, Robinson *et al.* (1991) have listed achievement, innovativeness, control and self-confidence as entrepreneurial attitudes. Need for achievement and locus of control are among the characteristics that have received the most attention in the entrepreneurship literature (Shaver and Scott, 1991).

Need for Achievement

Of all the psychological characteristics presumed to be associated with entrepreneurship, need for achievement has the longest history (Shaver and Scott, 1991). Achievement motivation can be defined as "behavior towards competition with a standard of excellence" (McClelland, 1953). The belief that entrepreneurs might have a distinctly higher need for achievement is widely held (McClelland, 1965; Cromie, 2000). Some dominant cultural values encourage the need for achievement (McClelland, 1961; McClelland and Winters, 1969). 20 out of 23 major studies in the entrepreneurship literature found a fairly consistent relationship between need for achievement and entrepreneurship despite the variability among the studies regarding samples and the operationalization of the need for achievement (Johnson, 1990; Shaver and Scott, 1991). In line with this, the following hypothesis is formulated:

H1: Higher need for achievement has a positive influence on entrepreneurial inclination.

Locus of Control

Locus of control can be defined as an individual's perceptions about the rewards and punishments in his or her life (Pervin, 1980). It can be referred to as the perceived control over the events of one's life (Rotter, 1966). While individuals with an internal locus of control believe that they are able to control's life events, individuals with an external locus of control believe that life's events are the result of external factors, such as chance, luck or fate. Empirical findings that internal locus of control is an entrepreneurial characteristic have been reported in the literature (Ho and Koh, 1992; Robinson *et al.*, 1991; Koh, 1996; Cromie, 2000). In a student sample, internal locus of control was found to be positively associated with the desire to become an entrepreneur (Bonnett and Furnham, 1991). Therefore, the following hypothesis is elicited:

H2: Higher locus of control has a positive influence on entrepreneurial inclination.

Propensity to take risk

Risk-taking propensity is defined as "the perceived probability of receiving rewards associated with the success of a situation that is required by the individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation (Brockhaus, 1980). It is believed that entrepreneurs prefer to take moderate risks in situations where they have some degree of control or skill in realizing a profit. Situations which involve either extremes of risk or certainty are not preferred (McClelland, 1961; McClelland and Winters, 1969). Much of economics and entrepreneurship literature includes risk-taking as a major entrepreneurial characteristic (Palmer, 1971; Kilby, 1971; Sarachek, 1978; Mill, 1984; Cunningham and Lischeron, 1991, Ho and Koh, 1992; Koh, 1996; Cromie, 2000). Risk taking inclination is therefore expected to have positive influence on entrepreneurial orientation. The following hypothesis is formulated and will be tested:

H3: Higher propensity to take risk has a positive influence on entrepreneurial inclination

Tolerance for ambiguity

Budner (1962) defines intolerance for ambiguity as "a tendency to perceive ambiguous situations as sources of threat". From this definition, tolerance for ambiguity can be inferred to be a tendency to perceive ambiguous situations in a more neutral way. A person who has a high tolerance for ambiguity is one who finds ambiguous situations challenging and who strives to overcome unstable and unpredictable situations in order to perform well (Koh, 1996). Entrepreneurs do not only operate in an uncertain environment; according to Mitton (1989), entrepreneurs eagerly undertake the unknown and willingly seek out and manage uncertainty. It is believed that tolerance for ambiguity is an entrepreneurial characteristic and those who are entrepreneurially inclined are expected to display more tolerance for ambiguity than others (Sarachek, 1978; Schere, 1982). In line with this discussion, the following hypothesis is formulated:

H4: Higher tolerance for ambiguity has a positive influence on entrepreneurial inclination

Self-confidence

Given that an entrepreneur is generally regarded as one who prefers to own his own business, it can be expected that the entrepreneur must believe that he is able to achieve

the goals that are set (Koh, 1996). In other words, an entrepreneur is expected to have a perceived sense of self-esteem and competence in conjunction with his business affairs (Robinson *et al.*, 1991a). Ho and Koh (1992) have suggested that self-confidence is a necessary entrepreneurial characteristic and that it is related to other psychological characteristics. Empirical studies in the entrepreneurship literature have found entrepreneurs to have a higher degree of self-confidence relative to non-entrepreneurs (Ho and Koh, 1992, Robinson *et al.*, 1991a). A positive relationship is therefore hypothesized between self confidence and entrepreneurial inclination.

H5: Higher self confidence has a positive influence on entrepreneurial inclination.

Innovativeness

Innovativeness relates to perceiving and acting on business activities in new and unique ways (Robinson *et al.*, 1991). As suggested by Schumpeter (1934) and Mitton (1989), innovativeness is the focal point of entrepreneurship and an essential entrepreneurial characteristic. Evidence reported in the entrepreneurship literature shows that entrepreneurs are significantly more innovative than non-entrepreneurs (Ho and Koh, 1992, Robinson *et al.*, 1991a, Robinson *et al.*, 1991b., Cromie, 2000). According to Lumpkin and Erdogan (1999), innovativeness, especially product innovativeness, may be positively influenced by risk-taking propensity. Product innovativeness requires a certain degree of tolerance for taking risks because innovativeness benefits from the willingness to take risks and tolerate failures. So, higher inclination towards innovativeness is expected to lead to greater entrepreneurial inclination. With that in mind, the following hypothesis is developed:

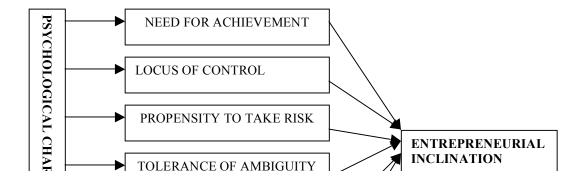
H6: Higher level of innovativeness has a positive influence on entrepreneurial inclination.

Conceptual framework

The conceptual framework in this model is based on the psychological characteristics school of thought (Cunningham and Lischeron, 1991). The dependent variable in this research is entrepreneurial inclination and the independent variables are need for achievement, locus of control, propensity to take risk, tolerance for ambiguity, self-confidence and innovativeness.

The relationship between the dependent variable and independent variables is depicted in Figure 1.

FIGURE I Schematic diagram of the theoretical framework



DEPENDENT VARIABLE

INDEPENDENT VARIABLES

3. METHODOLOGY

Data Collection and sample

Survey based methodology was used in this research to obtain data from the respondents namely undergraduate and postgraduate students from UNITAR. Data collection for this study began in March 2006 and ended in early September 2006. The data for this study was collected through a self-administered questionnaire by the researchers. The questionnaire was divided into three sections, section A, B and C. Section A comprised questions eliciting demographic and other personal characteristics. Section B comprised of 12 statements designed to gather the information from the respondents regarding their inclination towards entrepreneurship. Section C comprised of 38 statements eliciting view on the factors influencing entrepreneurial inclination. A five point Likert scale was used in Section B and C where the respondents were required to state the extent to which they agreed or disagreed with the statements in the questionnaire. Due to time limitation, the sampling was based on convenience and 361 questionnaires were successfully collected and were found to be complete and usable for data analysis.

Regression model and measurements

To test the five hypothesis developed earlier, a multiple regression model is employed. This was due to the continuous nature of the data. The regression model takes the following form:

ENTPINC = β_0 + β_1 NEEDA + β_2 LOC + β_3 RISKIV + β_4 TOLA + e where, ENTPINC= is the dependent variable measured by students entrepreneurial inclination NEEDA = is the independent variable measured by items indicating whether 'need for achievement' is an important factor influencing entrepreneurial inclination. LOC = is the independent variable measured by items indicating whether 'locus of control' is an important factor influencing entrepreneurial inclination. RISKIV = is the independent variable measured by items indicating whether 'propensity to take risk' and innovativeness' is an important factor influencing entrepreneurial inclination.

TOLA = is the independent variable measured by items indicating whether 'tolerance for ambiguity' is an important factor influencing entrepreneurial inclination

e = is the error term

Factor Analysis

While conducting factor analysis, the correlation matrix of the 50 variables was obtained. The result indicated that factor analysis can be conducted as the KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy is 0.850. The Bartlett test of sphericity is significant and the KMO measure of sampling adequacy is greater than 0.6 (Refer Kaiser criterion, 1960). Factor Analysis with principal axis factoring method and varimax rotation was then used to cluster the variables in Section B and C of the questionnaire into several factors that explain the respondent's entrepreneurial inclination. In order to control the number of factors extracted, a minimum Eigen value of one (1) was used in the factor analysis. Factors with Eigen value less than one were considered insignificant and were excluded. Varimax orthogonal rotation was then used to group variables with large loadings (correlations) for the same factors so that each factor will be represented by a specific cluster of variables. Varimax rotation would ensure that the factors produced are independent and unrelated to each other. The factor analysis has generated fourteen (14) factors as solution with a total cumulative % of variance of 63.4%. Only five (5) factors were found to have a meaningful relationship and therefore the factors were retained and interpreted. These factors are depicted in Table 1.

F1: RISK TAKING AND INNOVATIVENESS (RISKIV)

F2: ENTREPRENEURIAL INCLINATION (ENTPINC)

F3: NEED FOR ACHIEVEMENT (NEEDA)

F4: TOLERANCE FOR AMBIGUITY (TOLA)

F5: LOCUS OF CONTROL (LOC)

Due to the reduced number of factors retained, only hypotheses H1, H2, H3 and H4 will be tested in the data analysis section. Most of the items measuring risk taking and innovativeness were grouped together after factor analysis. Therefore, it was decided to group them as one factor –F1.

Table 1: Rotated Factor Matrix

ITEM	F 1	F2	F 3	F 4	F5
I can admit my mistakes	0.644				
I welcome others opinion	0.641				
I look at things from a variety of viewpoints					
before making a decision					
I can express my true feelings	0.626				
I can make up my mind and stick with it	0.597				
I entertain new ideas with enthusiasm	0.588				
I search for new and better ways of approaching	0.570				

work I make decision that others call 'innovative' I always ask questions I am challenged by situations that require creativity I have peace of mind I like to do things that others may not think of	0.566 0.557 0.543 0.518 0.319				
I have strong desire to be the owner of my business I am interested in starting my own business I am always inclined towards entrepreneurship I see myself becoming some type of entrepreneur one day		0.820 0.820 0.820 0.791			
I have strong plans to venture into business once I complete my studies Planning for some kind of business has been, is, or will be an important part of my college career.		0.763 0.535	0.020		
I like to increase my status and prestige I have the desire to have high earnings I like to achieve a higher position for myself in society I have high ambition			0.838 0.774 0.838 0.729 0.559 0.491		
I like to achieve something and get recognition for it I will become successful if I work hard			0.491	0.642	
I fear and avoid failure I am afraid of uncertainties in my life I will not take risk if I fail in a project I am easily upset when my plan does not work out				0.643 0.639 0.628 0.437	
I believe that luck can lead to success* I have strong control over the direction of my life				0.389*	0.609
I believe, I am a master of my own fate I believe success depends on one's own doing I never do things which I am not sure of * *Items omitted to enhance reliability					0.548 0.427 0.358*

A Cronbach coefficient alpha test was conducted on all the four factors generated to test the reliability of all its item variables. This was to determine the internal consistency of the scale used. According to Sekaran (2000), Cronbach Alpha is a reliability coefficient that indicates how well the items are positively correlated to one another. The closer the Cronbach alpha is to 1, the higher the internal consistency. Item 6, 9, 10 (Section B) and item 2, 16, 19, 21, 24 (Section C) in the questionnaire were negatively worded and recoded prior to the analysis. Two items, one from factor 4 'I believe that luck can lead to success and another from factor 5 'I never do things which I am not sure of' were omitted to enhance the reliability of the data. The values of Cronbach Alpha coefficient are depicted below in Table 2.

Table 2: Reliability Statistics

FACTORS	-					CRONBACH
						ALPHA
FACTOR	1	:	RISK	TAKING	AND	0.868
INNOVATI	VENESS((RISKI	V)			
FACTOR 2	: ENTRE	PRENI	EURIAL INC	CLINATION(EN	TPINC)	0.896
FACTOR 3	: NEED F	OR A	CHIEVEME	NT(NEEDA)		0.861
FACTOR 4	: TOLER	ANCE	OF AMBIG	UITY(TOLA)		0.670
FACTOR 5	: LOCUS	OF CO	ONTROL(LC	OC)		0.657

4. DATA ANALYSIS

Demographic and personal characteristics of the sample

Based on the demographic characteristics provided in Table 3 below, we find that the majority of the respondents are female (68%) and are between 21-25 years of age (69.3%). In terms of race, majority were Malay (49.3%) followed by Indians (29.1), Chinese (13.3%) and others (8.3%). 84% of the respondents were undergraduates with the remaining 16% being postgraduate students. With regards to student status, 73.5% of the respondents were studying on a full time basis as compared to 26.5% who were studying on a part time basis. UNITAR attracts a substantial number of part timers due to its flexible learning mode.

Table 3: Frequency Distributions of Sample (n = 361)

Demographic	Frequency	Percentage
Gender		
Male	117	32.0
Female	244	68.0
Age		
< 20	35	9.7
21 - 25	250	69.3
26 - 30	41	11.4
> 30	35	9.7

Race		
Malay	178	49.3
Chinese	48	13.3
Indian	105	29.1
Others	30	8.3
Student education level		
Undergraduate	304	84
Postgraduate	57	16
Student Status		
Full time	265	73.5
Part Time	96	26.5

Descriptive analysis

Table 4 shows the mean values and standard deviation of the constructs that depicts the psychological characteristics of the respondents. High mean values were obtained for four of the constructs – risk taking and innovativeness, entrepreneurial inclination, need for achievement and locus of control. However, the mean value for tolerance for ambiguity was on the low side.

Table 4: Descriptive Statistics

Constr	uct				Mean	Std. Deviation
F1	:	RISK	TAKING	AND	3.86	0.16
INNOV	VATIVE:	NESS(RISK	IV)			
F2		:	ENTREPREN	EURIAL	3.69	0.19
INCLI	NATION	(ENTPINC)				
F3 : NI	EED FOI	R ACHIEVE	MENT(NEEDA)		4.32	0.1
F4 : T0	DLERAN	ICE FOR AN	MBIGUITY(TOL	A)	2.98	0.13
F5 : L0	OCUS OI	F CONTROI	L(LOC)		3.86	0.26

Correlation analysis

Correlation values were computed among all the variables to find out whether there was any relationship among the variables. Specifically, correlation analysis was conducted between the dependent variable 'ENTPINC' with the other three independent variables namely 'RISKIV', 'NEEDA', 'TOLA' and 'LOC'.

The correlation results are depicted in Table 5 below.

Table 5: Correlations among the variables

	Construct	1	2	3	4	5
1	ENTPINC	1				
2	RISKIV	0.383**	1			

3	NEEDA	0.375**	0.470**	1		
4	TOLA	0.156**	0.049	0.021	1	
5	LOC	0.237**	0.525**	0.502**	0.127**	1

^{**} Correlation is significant at the 0.01 sig. level (one tailed)

Positive correlations were found between 'ENTINC' the dependent variable and the other independent variables – 'RISKIV', 'NEEDA', 'TOLA' and 'LOC'.

Multiple regression analysis

Standard multiple regression analysis was conducted to examine the relationship between the dependent variable - 'ENTPINC' and the independent variables - 'RISKIV', 'NEEDA', 'TOLA' and 'LOC'. The results of the standard regression are shown in Table 6 below.

Table 6: Standard Regression Results

Variables	Dependent Variables ENTPINC	Significant	
	Standard Coefficient (β)	t- value	level
Constant (β_0)	-		
RISKIV	0.289	4.986	0.000
NEEDA	0.271	4.989	0.000
TOLA	0.150	3.133	0.020
LOC	-0.73	-1.224	0.222
Rsquared	0.220		
Adjusted Rsquared	0.211		
F value	24.399		0.000

Notes: Standardised coefficient are reported along with t statistics in parentheses

All the four (4) independent variables together explain 21.1% of the variance in the perception towards entrepreneurial inclination. The results are found to be highly significant as indicated by the F value -24.399 (p<0.05).

Risk taking and innovativeness (RISKIV), need for achievement (NEEDA) and tolerance for ambiguity (TOLA) had positive and significant influence on entrepreneurial inclination (ENTPINC). The results also confirmed to the hypothesized sign. However, locus of control (LOC) had negative influence on entrepreneurial inclination (ENTPINC) and did not confirm to the hypothesized sign. This may be due to the small number of items used to measure LOC as shown in Table 1. It can also be due to the low reliability of this construct as indicated by the low Cronbach Alpha value given in Table 2. The construct LOC was also found to be highly correlated with the other independent variables as indicated in Table 5. LOC's correlation with RISKIV was 0.525 and with NEEDA was 0.502. This high correlation between the independent variables shows that some of the items used to measure these variables are quite similar. So, the joint effect of these variables would have had an influence on the negative value obtained for LOC.

^{* =} p < 0.05

5. CONCLUSION

The purpose of this research was to examine whether our young generation is inclined towards entrepreneurship or not, based on the psychological characteristics of the students at UNITAR. It was observed that this group of students had a very high need for achievement, had a high propensity to take risk, was willing to innovate and had a high locus of control. They had a moderate tolerance for ambiguity. Based on these psychological characteristics of the respondents, it was not a surprise that they were highly inclined towards entrepreneurship. If this sample of students could be taken as a representative of students at other institutions, we expect a lot of entrepreneurial activity in Malaysia. However, it is important that new entrepreneurial ventures should not only be created but should be successful too. What is likely to come in their way of success needs to be further researched and analyzed. On hindsight, a proper support system, education, and the development of managerial competencies may go a long way in making them successful.

Acknowledgement

Authors gratefully acknowledge the financial assistance given by the University to carry out this research.

REFERENCES

Alstete, J.W. (2002), "On becoming an entrepreneur: an evolving typology", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 8 No.4, pp.222-34.

Ariff, M. and Syarisa Yanti, A.B. (2002). "Strenthening Entrepreneurship in Malaysia". Malaysian Economic Outlook: 1st Quarter 2002 update, *Proceedings of the 7th Corporate Economic Briefing, 2002, Malaysian Institute of Economic Research (MIER)*, Malaysia, p.p 1-22.

Begley, M.W., Boyd, D.P. (1987), "Psychological Characteristics Associated with Performance in Entrepreneurial Firms and Small Businesses", *Journal of Business Venturing*, Vol. 2, pp. 79-93.

Bonnett, C. Furnham, A. (1991), "Who wants to be an entrepreneur? A study of adolescents interested in a yound enterprise scheme", *Journal of Economic Psychology*, Vol. 12 No. 3, pp. 465-478.

Brockhaus, R.H. (1980), "Risk-taking propensity of entrepreneurs", *Academy of Management Journal*, Vol. 23 No. 3, pp. 509-520.

- Brockhaus, R.H., Sr., Horwitz, P.S. (1986), "The Psychology of the Entrepreneur", in *The Art and Science of Entrepreneurship*, ed. D.L. Sexton and R.W. Smilor, Cambridge: Ballinger, pp. 25-48.
- Budner, S. (1962), "Intolerance for ambiguity as a personality variable", *Journal of Personality*, Vol. 30, pp. 29-50.
- Bygrave, W.D. (1989). "The entrepreneurship paradigm (I): a philosophical look at its research methodologies", *Entrepreneurship: Theory and Practice*, Vol. 14, pp. 7-26.
- Connie, R., James, W.K., John, E.F., Susan, M.F., Steven, S.W. and Daniel, W.W. (2005). "A Framework for the Entrepreneurial Learner of the 21st Century", *Online Journal of Distance Learning Administration*, Vol. 8 No. 3.
- Cromie, S. (2000), "Assessing entrepreneurial inclination: Some approaches and empirical evidence", *European Journal of Work and Organizational Psychology*, Vol. 9 No. 1, pp. 7-30.
- Cunningham, J.B. and Lischeron, J. (1991). "Defining entrepreneurship", *Journal of Small Business Management*, Vol. 29, pp. 45-61.
- Frank, H., Korunka, C., Lueger, M., Mugler, J. (2005), "Entrepreneurial orientation and education in Austrian secondary schools", *Journal of Small Business and Enterprise Development*, Vol. 12 No. 2, pp. 259-273.
- Green, R., David, J., Dent, M., Tyshkovsky, A. (1996), "The Russian entrepreneur: a study of psychological characteristics", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 2 No.1, pp.49-58.
- Gurol, Y., Atsan, N. (2006), "Entrepreneurial characteristics amongst university students: Some insights for entrepreneurship education and training in Turkey", *Education and Training*, Vol. 48 Issue 1, pp. 25-38.
- Hatten T.S. and Ruhland, S.K.(1995), "Student Attitude Toward Entrepreneurship As Affected by Participation in an SBI Program, *Journal of Education For Business*, Vol. 70 No. 4, pp 224-227.
- Ho, T.S. and Koh, H.C. (1992). "Differences in psychological characteristics between entrepreneurially inclined and non-entrepreneurially inclined accounting graduates in Singapore", *Entrepreneurship, Innovation and Change: An International Journal*, Vol. 1, pp. 43-54.
- Jack, S.L., Anderson, A.R. (1999), "Entrepreneurship education within the enterprise culture", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 5 No.3, pp.110-25.

Johnson, B.R. (1990). "Toward a multidimensional model of entrepreneurship: the case of achievement motivation and the entrepreneur", *Entrepreneurship: Theory and Practice*, Vol. 14, pp. 39-54.

Kaiser, H.F. 1960. The application of electronic computer to factor analysis. *Educational* &

Psychological Measurement. 20:141-151.

Klapper, R. (2004), "Government goals and entrepreneurship education – an investigation at Grande Ecole in France", *Education and Training*, Vol. 46 No. 3, pp. 127-137.

Kilby, P. (1971), Entrepreneurship and Economic Development. New York: Free Press.

Koh, H.C. (1996). "Testing hypotheses of entrepreneurial characteristics: A study of Hong Kong MBA students", *Journal of Managerial Psychology*, Vol. 11 No. 3, pp. 12-25.

Korunka, C., Frank, H., Luegler, M. and Mugler, J. (2003). "The entrepreneurial personality in the context of resources, environment and the start-up process: A configurational approach", *Entrepreneurship: Theory and Practice*, Vol. 28, pp. 23-42.

Kamariah. O., Yaacob, A., and Wan Jamaliah, W.J. (2004). "Demographics and personal characteristics of urban Malaysian entrepreneurs: an ethnic comparison". *Proceedings of the 3rd International Conference on SMEs in a Global Economy, University Teknologi Mara*, Kuala Lumpur, Malaysia, 6-7th July, 2004.

Lumpkin, G.T., Erdogan, B. (1999), "If Not Entrepreneurship, Can Psychological Characteristics Predict Entrepreneurial Orientation? A Pilot Study". *Proceedings USA Small Business Enterprise (USASBE) Conference*. San Francisco.

Mill, J.S. (1984), Principles of Political Economy with Some Applications to Social Philosophy, London: John W. Parker, pp. 32.

McClelland, D.C. (1953), The Achievement Motive. New York: Appleton-Century-Crofts.

McClelland, D.C. (1961), *The Achieving Society*, Princeton: D. Van Nostrand.

McClelland, D.C. (1965), "Achievement Motivation Can Be Developed", *Harvard Business Review*, Vol. 43, pp. 6-25.

McClelland, D.C., Winter, D.G. (1969), *Motivating Economic Achievement*. New York: Free Press.

Minniti, M., Bygrave, W.D., Autio, E. (2005), Global Entrepreneurship Monitor (GEM), Executive Report, Babson College and London Business School.

Mitton, D.G. (1989). "The complete entrepreneur", *Entrepreneurship: Theory and Practice*, Vol. 13, pp. 9-19.

Morrison, A. (2000). "Entrepreneurship: what triggers it?", *International Journal of Entrepreneurship Behavior & Research*, Vol 6, No 2, pp. 59-71.

Mueller, S.L., Thomas, A.S. (2000), "Culture and entrepreneurial potential: a nine country study of locus of control and innovativeness", *Journal of Business Venturing*, Vol. 16 pp.51-75.

Nor Aishah, B and Yufiza, M. Y. (2004). "Demographics and personal characteristics of urban Malaysian entrepreneurs: an ethnic comparison". *Proceedings of the 3rd International Conference on SMEs in a Global Economy, University Teknologi Mara,* Kuala Lumpur, Malaysia, 6-7th July, 2004.

Nor, M., Ezlika, G. and Ong, C. C. (2004). "Demographics and personal characteristics of urban Malaysian entrepreneurs: an ethnic comparison". *Proceedings of the 3rd International Conference on SMEs in a Global Economy, University Teknologi Mara*, Kuala Lumpur, Malaysia, 6-7th July, 2004.

Noor, M. and Ali, J. (2004). "A study of entrepreneurship inclinations among board members of the fishermen's associations". Proceedings of the 1st International Borneo Business Conference, 2004, University Sarawak Malaysia, Kota Kinabalu, Sabah. 9th - 11th December, 2004.

Outcalt, C. (2000), "The Notion of Entrepreneurship: Historical and Emerging Issues", Kaufman Center for Entrepreneural Leadership Clearinghouse on Entrepreneurship Education. Kansas City, United States of America.

Palmer, M. (1971), "The Application of Psychological Testing to Entrepreneurial Potential", *California Management Review*, Vol. 13, pp. 32-38.

Pervin, L.A. (1980). *Personality: Theory, Assessment and Research*, John Wiley & Sons, New York, NY.

Rauch, A. and Frese, M. (2000)."Psychological approaches to entrepreneurial success: A general model and an overview of findings", In C.L. Cooper and I.T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology*, pp.101-142.

Robinson, P.B., Stimpson, D.V., Huefner, J.C., Hunt, H.K. (1991a), "An attitude approach to the prediction of entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 15 No.4, pp.13-32.

Robinson, P.B., Huefner, J.C., Hunt, H.K. (1991b), "Entrepreneurial research on student subjects does not generalize to real world entrepreneurs", *Journal of Small Business Management*, Vol. 29, pp. 42-50.

Rohaizat, B. and Fauziah, S.A. (2002), "Access to Human Capital in Entrepreneurship Education: A Comparison of Male and Female Students in Technical Disciplines", *Akauntan Nasional*, September, pp. 30-33.

Rotter, J.B. (1966), "Generalized expectancies for internal versus external control of reinforcement", *Psychological Monographs: General and Applied*, 80(1), pp. 609.

Sarachek, B. (1978), "American Entrepreneurs and the Horatio Alger Myth", *Journal of Economic History*, Vol. 38, pp. 439-456.

Schere, J. (1982), "Tolerance of ambiguity as a discriminating variable between entrepreneurs and managers", *Proceedings of the Academy of Management*, Vol. 42, pp. 404-408.

Schumpeter, J.A. (1934). *The Theory of Economic Development*, Harvard University Press, Cambridge, M.A.

Schumpeter, J.A. (1951). Change and the entrepreneur. In R.V. Clemence (Ed.), *Essays of J.A. Schumpeter*. Reading, MA: Addison-Wesley.

Sekaran, U. 2000. Research Methods for Business: A Skill –Building approach. New York: John Wiley & sons. Inc.P.308-313.

Shaver, K.G. and Scott, L.R. (1991). "Person, process, choice: the psychology of new venture creation", *Entrepreneurship Theory and Practice*, Vol. 16, pp. 23-45.

Stanworth, J., Blythe, S., Granger, G., & Stanworth, C. (1989). Who becomes an entrepreneur?