Entrepreneurship and Shyness Attitudes of First Year Students at Universiti Kebangsaan Malaysia (UKM): A Path Analysis Model

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Abstract: One of the important soft skills that have always been stressed by the Malaysian Ministry of Higher Education for the university students to acquire during their university's life is entrepreneurship skill. This soft skill should be an added value to students' academic qualification once they leave university to face the real world. However, there are many factors that can be obstacles to students to acquire this soft skill such as shyness, social environment, academic stress, etc. It is therefore, this study attempts to examine to what extent factors such as shyness, social, artistic and self-esteem have influence on students' involvement in entrepreneurship. There were 2,284 1st year students of Universiti Kebangsaan Malaysia (UKM) have been chosen as respondents and each of them was provided with a set of questionnaire consisting of seven domains to be answered. SPSS program was used to process the data and then by the path model was employed to analyze the data. The path coefficients were computed by using Structural Equation Modeling (SEM). The results showed that the most influential factor on students' entrepreneurial activities was social behavior with the path coefficient of 0.35. Even though, shyness has a small negative path coefficient, i.e., -0.08, it agreed with the assumption that by reducing this students' personality trait, it will increases the involvement of them in entrepreneurial activities. Based on the residuals (e) of the regressions and other statistical tests, it is confirmed that other unexplained variables should be considered in an attempt to find the most influential factors on students' involvement in entrepreneurial activities.

Key words: Soft skills, shyness, entrepreneurship, path analysis, self-esteem, Malaysia

INTRODUCTION

Excellent in academic alone during the university life now-a-days is not a guarantee for students to get a better job after leaving university. This is because every year all universities in Malaysia, either public or private, produce thousands of graduated students from various disciplines. They have to compete among themselves to get jobs. Some of them with a good CGPA, however will further their studies for the second and third degrees, i.e., master and PhD degrees. However, this group of students is only about 10-20% out of thousands graduated students. Another about 80% has to compete in open market to get jobs. Therefore, a part from having an excellent academic achievement, government has urge students to acquire extra soft skills during their university life. This is to ensure they have both academic as well as

soft skills requirement, once they leave their universities for the real world in searching for a better job with a good salary. Besides, these required soft skills are not only important for the students to find jobs but also an asset for them to run or to open their own businesses rather than work with government or private sectors. One of the most important soft skills that should be acquired by all university students before they leave university is entrepreneurship. For students who enroll at the faculty of economic and management they certainly have courses that train them to master this skill. For non-economic and management students, on the other hand, the university has created several entrepreneurship programs that can be followed by students during session or during vacation time. At the end of the program, students will be given certificate of attendance and recognized that the students have gone through the program successfully.

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Perhaps, with a little knowledge of entrepreneurship acquired during university life they can open their own business in the future. However as Wang and Wong (2004) mentioned that students' attitude and knowledge of entrepreneurship during university life are perhaps most important factors that can shape up their inclination to open their own business once they leave university. Based on previous research the percentage of graduated students started their own business once they leave university varied according to countries. In 1980's, it was only about 40.7 and 34.3% of the students in the UK and Irish were interested in starting their own business, respectively (Scott and Twomey, 1988). Actually, the self-employment rate in the UK grew from 7.7% in 1979 to 12.4% in 1987 and around the same level in the 1990's (Hakim, 1988). The same situation was also observed in the Netherlands, i.e., 9.9% in 1987 and increased to 11.3% in 1996 and in Canada whereby the percentage was increased from 8.9% in 1987 to 10.9% in 1997 as quoted by Wang and Wong (2004). In Asia, especially in Singapore, Ghazali *et al.* (1995) managed to survey of about 2486 graduated students. These students were graduated between 1 and 8 years and they found that only about 8.6% of them to be self-employed. The intention of students in Singapore, especially final year of undergraduate engineering students to start their own business after leaving university was about 61.8% as reported by Doh *et al.* (1996).

These relatively small percentages of graduated students doing their own business could be due to several factors. One of these factors is gender as observed by many past studies (De Wit and Winden, 1989; Lerner and Yeoshua, 1996; Matthews and Moser, 1996; Mesch and Czamanski, 1997; Kourilsky and Walstad, 1998). Other possible related factors that can be increased entrepreneurship propensity among graduate students are family background (Wang and Wong, 2004; Scott and Twomey, 1988; Brown *et al.*, 2007; Crant, 1996; Schiller and Crewson, 1997), ethnicity (Evans and Leighton, 1989; Devine, 1994), educational background and training (Van de Ven and Schroeder, 1984; Ghazali *et al.*, 1995; Oosterbeek *et al.*, 2010), risk-averse attitude (Crant, 1996; Cunningham *et al.*, 1995) and risk tolerance (Caliendo *et al.*, 2010; Hartog *et al.*, 2010). However, no previous studies explore whether personality traits such as shyness, self-esteem, social behavior and artistic have impact on entrepreneurship. Based on this situation, therefore this study attempts to analyze, to what extent, shyness plays an important role in determining the students' involvement in the entrepreneurship program at UKM. Besides, other personality traits, i.e., artistic, self-esteem and social behavior will also be observed their significant impacts on entrepreneurship.

MATERIALS AND METHODS

Data collection: Survey was carried out to gather information about UKM students' involvement in entrepreneurial activities in campus. Altogether, 2,284 respondents were chosen from 1st year students of the 12 different faculties. Out of this number, 684 and 1,600 were male and female students, respectively. Survey was conducted during the first semester of the 2010-2011 session at the UKM main campus in Bangi, Selangor. They were the residents of the 12 student colleges. Break down of the respondents is shown in Table 1. They were given a set of questionnaire that was formed by seven sections. In section one, questions were asked about respondents background meanwhile in section two questions were directed to measure shyness domain. The level of artistic was asked in section three of the questionnaire whereby social and entrepreneurship domains were formed in section four and five, respectively. Questions about self-esteem and academic stress domains were asked in section six and seven, respectively. However in this study, the academic stress domain was not included in the model for the purpose of analyzing and discussion.

Data analysis: In order to examine the pattern of the relationship between the five studied variables, i.e., artistic, social, self- esteem, shyness and entrepreneurship among 1st year students of 12 different faculties at UKM, the path analysis model was employed by using AMOS Version 18. The path coefficients were computed by using Structural Equation Modeling (SEM). The level of significant for this study was set up at 5% or $p<0.05$. Basically, the aim of this model is to provide quantitative estimates of the causal connections between these set of variables. The assumption is that the entrepreneurship is not only has a direct influence of certain factors but also has indirect impact of many factors. In this study, the students' entrepreneurship was assumed to have a direct influence of shyness, artistic, social behavior and self-esteem.

Table 1: Break down of respondents by faculty and college

Faculty	Samples	College	Samples
Dentistry	20	Aminuddin Baki	269
Law	42	Ibu Zain	147
Technology and Information Sciences	120	Burhanuddin Hilmi	199
Science and Technology	576	Dato' Onn	55
Science Social and Humanities	339	Ibrahim Yaakob	92
Faculty of Allied Health Sciences	237	Keris Mas	278
Islamic Studies	220	Pendita Zaaba	341
Medicine	193	Rahim Kajai	159
Education	58	Tun Doktor Ismail	33
Engineering and Built Environment	161	Tun Hussain Onn	142
Economic and Management	244	Syed Nasir	466
Pharmacy	74	Ungku Omar	103
Total	2,284	Total	2,284

Table 2: Cronbach's alpha for studied variables and samlpe items for the used scales

Variables	Sample items	α
Entrepreneurship	Problem solving with the thinking lost-benifit	0.825*
	Happy with activities that can influence people	
Shyness	When in a group of people, I have trouble thinking of the right things to talk about	0.709*
	I feel more shy when I sit with frends from different occupations	
Social	Attending social activities when I have free time	0.806*
	Work together to solve occupational problems	
Self-esteem	I feel myself is important as the others	0.820*
	I feel I do not have to be proud off	
Artistic	I like activities based on culture	0.839*
	I like job that is required imigination	

*$p = <0.01$

Variables used in the path model

Entrepreneurship (ET): Entrepreneurship as mentioned in the introduction is one of the soft skills that should be acquired by most of the students while they are studying in university. They have to participate in any business activities available in the campus such as selling goods, food kiosks, photostating activities and computer shop, etc. In this study, entrepreneurship, the dependent variable is covered by 15 items and measured by 2-point Liker scale ($0 = no$, $1 = yes$) to form of low, medium and high scores. It was hypothesised in this study that students' involvement in entrepreneurship is subjected to and best viewed from four factors, i.e., shyness, self-esteem, social and artistic. Reliability test was used in order to find consistency among 15 items to form entrepreneurship skill among students. Cronbach's alpha, α value of 0.825 indicates the consistency of the items (Table 2). Therefore, this instrument can be used to measure the students' entrepreneurship level.

Shyness (SY): This variable is used to measure to what extent the degree of shyness will affect the involvement of students in entrepreneurial activities. This independent variable has 15 items and measured by the maximum of 5-point Likert scale ($1 = $ not true of me at all to $5 = $ extremely true of me). The scores were then forming the three group of scores, i.e., low, medium and high. Cronbach's alpha (α) was also used to test the reliability of the shyness items. Even though, the α value was only calculated about 0.709, it is still significant at the required significant level of <0.01 (Table 2). It implies that shyness is reliable to be used as one of the factors that has been hypothesised to influence students' entrepreneurship levels.

Social (SOC): Social is another independent variable to measure the level of students' involvement in entrepreneurial activities in campus. It is formed by 15 items with the maximum of 2-point Likert scale ($0 = no$, $1 = yes$). The score will be groups into low, medium, high and very high. Reliability of the social variable was once again tested by using the Cronbach's alpha (α) statistical test. The test was produced the α value of 0.806 which is significant at the required level of <0.01. Hence, it indicates that the variable can easily be used as one of the factors to determine the students' involvement in entrepreneurial activities in campus.

Self-Esteem (SE): Self-esteem is another personality characteristic of individuals that is hypothesised to be an important factor that determine the extent of students' involvement in entrepreneurial activities in campus. This independent variable is formed by 10 items and measured by the 4-point Likert scale ($1 = $ Strongly disagree to $4 = $ Strongly agree). All scores will be categorised into three groups representing low, medium and high self-esteem. The Cronbach's alpha (α) test has produced the value of 0.820 which is significant at the <0.01 required level (Table 2). Therefore, this personality trait can be included in determining to what extent, the students' involvement in the entrepreneurial activities.

Artistic (AC): Another independent variable that was assumed to have a correlation with entrepreneurship is artistic. To assess the effect of this variable on the students' involvement in entrepreneurship 15 items were selected and answered by students using the 2-point Likert scale ($0 = No$, $1 = Yes$). The scores were then grouped into low, medium and high categories of artistic characteristics. Before this independent variable can be used as an instrument in measuring students' involvement in entrepreneurial activities, the Cronbach's alpha was used to test its reliability (Table 2). The higher value of α (0.839) means that this personality trait can be included in this study as a measured variable of students' participation in entrepreneurial activities.

RESULTS AND DISCUSSION

The path analysis: Path analysis is an extension of the multiple-regression which is normally used for identifying the relative strengths of the various direct and indirect
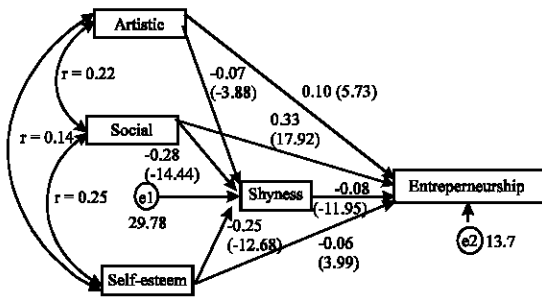
Fig. 1: Path coefficients and t scores (in bracket) after analysis

links between variables. Data must be standardized first before fitting a path model. This can be done by removing the normal constant (a) from the standard regression equation:

$$y = a + bX$$

Therefore, it allows the regression coefficients to be compared in terms of relative strength of influence. In path analysis, the constant is normally zero in all cases because the standardization of the raw data. Therefore in this study, regression equations for each path in the path model were as follows:

$$ET = 0.00 - 0.08SY$$

$$SY = 0.00 - 0.07AC - 0.28SOC - 0.25SE$$

$$ET = 0.00 + 0.10AC + 0.33SOC + 0.60SE$$

Figure 1 shows the path coefficients (the standardized regression coefficients) of the relationship between entrepreneurship and shyness among respondents of 1st year students at UKM. It is clearly shown that shyness has a negative direct effect on entrepreneurship (p = -0.08), implying that increase in shyness is associated with decreases in entrepreneurship. Besides, the three co-variances, i.e., artistic, social and self-esteem have direct effects on entrepreneurship, p = 0.10, p = 0.33 and p = 0.06, respectively. This suggests that increase in all these three co-variances will increase the students' involvement in the entrepreneurial activities. Further analysis showed that the three co-variances (self-esteem, social and artistic) so-called factors are deemed to be correlated with each other as shown in Fig. 1.

The link between each other is indicated by a curved arrow with two heads. However, there is no attempt to ascribe these co-variances as indirect effects on entrepreneurship through each other. A part from having

shown direct effects on entrepreneurship among students each co-variance has also an indirect effect on entrepreneurship through shyness: artistic to shyness (p = -0.07) and shyness to entrepreneurship (p = -0.08); social to shyness (p = -0.28) and shyness to entrepreneurship (p = -0.08); self-esteem to shyness (p = -0.25) and shyness to entrepreneurship (p = -0.08). The negative p-values of these correlations means that increase in those variables are associated with decrease in shyness as expected. Furthermore, if these direct and indirect effects of variables were taken into consideration then this Path Analysis Model can be used to compare the total causal effect of all variables on entrepreneurship. The total effect of each variable can be carried out by adding up of all the direct and the total indirect effects as follows:

- Total effect of artistic = 0.10 + 0.01 = 0.11
- Total effect of social = 0.33 + 0.02 = 0.35
- Total effect of self-esteem = 0.06 + 0.02 = 0.08
- Total effect of shyness = -0.08

Four effects coefficients, i.e.:
- Shyness = -0.08
- Artistic = 0.11
- Self-esteem = 0.08
- Social = 0.35

Therefore from this study, it is clearly shown that the most significant factor, direct and indirect path is social behavior with the path coefficient value of 0.35. The final observation of this study is the reported coefficients concern the residual or error terms (e). These residuals are a measure of how much variation in the studied variables is caused by unmeasured factors. There are two residual values in this study, i.e., 12.59 and 29.73 (Fig. 1). This implies that besides these studied independent variables there are other variables or factors which is not specified in this model such as risk tolerance, preference for autonomy, innovativeness, gender, family experience with business, inadequate business knowledge, perceived risk (Wang and Wong, 2004) and communication competence (Arroyo and Harwood, 2011).

Hence in future research, these factors could be taken into consideration and analyzed to what extent they influence shyness and entrepreneurial activities among students at UKM. The low negative R^2 value for the entrepreneurship-shyness relationship for example could be further studied in terms of gender differences. As Crozier (2005) reported that female university students were greater shyness than male students. Furthermore, they were worrying more about saying smoothing foolish

Table 3: R² for regression equations

Regression equation	R²	1.0 - R²
Entre on artistic, social,	0.20	0.80
Self-esteem (ET on AC, SOC, SE)	20.0% of variation in entre explained by variables	80.0% of variation in entre not explained by variables
Shyness on artistic, social,	0.20	0.80
Self-esteem (SY on AC, SOC, SE)	20.0% of variation in shyness explained by variables	80.0% of variation in shyness not explained by variables
Entre on shyness (ET on SY)	0.06	0.94
	6.0% of variation in entre explained by variables	94.0% of variation in entre not explained by variables

when talking and discussing with unfamiliar people. In general, this is not happen to male students. Therefore if further research could distinguish and separate this particular factor then the entrepreneurship-shyness relationship perhaps could produce a better negative correlation.

Another factor that is important to include in future study of the influential factors of students' involvement in entrepreneurial activities is communication competence. As Arroyo and Harwood (2011) reported that shy individuals had lower relational quality than the non-shy. Generally, shy individuals displayed differences in verbal and nonverbal communication compared to individuals who were not shy.

If this factor could be taken as part of the Path Analysis Model then it will change the whole R^2 values particularly, direct effect on entrepreneurship. As already discussed in the study, family background and gender are other important factors that might shape up students' inclination to participate in entrepreneurial activities while they are in campus.

Wang and Wong (2004) for example, reported that the bivariate correlation analysis showed that family business experience had strong influence on the students' inclination in entrepreneurial interest in Singapore. Besides, they observed that gender was the most significant factor in the seven background factors that influenced students' interest in entrepreneurial activities.

Tests of goodness of fit using R^2: Table 3 shows the R^2 values for the three regression equations specified in the path model. It shows that the variation in entrepreneurship is explained by the independent variables artistic, social and self-esteem (only 20.0%). However, the influence of the three independents is quite small. Therefore, the strength of the unspecified variables is large as 80.0% of the variation is unexplained by the specified variables.

It can be said that perhaps these unspecified variables play an important role on entrepreneurship. One of the unspecified or unexplained variables that might be important in determining students' attitude towards participating in entrepreneurial activities while in campus is entrepreneurship education. As Graevenitz-von *et al.* (2010) found that entrepreneurship education is

Table 4: F-ratios for tests of statistical significance

Regression equations	Observed F-ratio	V_1	V_2	$F_{0.95}$	$F_{0.99}$	Sig.(α)
ET on AC, SOC and SE	167.68	3	2283	2.60	3.78	Yes
SY on AC, SOC and SE	187.43	3	2283	2.60	3.78	Yes
ET on SY	142.83	1	2283	3.84	6.64	Yes

considered as a good way of informing students about career options and of creating learning opportunities for checking and refining their assessments of which career is most suitable.

In addition, entrepreneurship education is also an additional factor to students' interest and willingness to venture in business after leaving university. Further analysis was carried out for shyness whereby its variation is explained by artistic, social and self-esteem was only about 20.0%. Therefore, another 80.0% its variation lies on other unexplained variables. The remaining path, entrepreneurship on shyness has relatively small R^2 value at only 6.0%. In this case, therefore the likelihood of a linear relationship can be considered small due to more unexplained variables that might be important in influencing students' involvement in the entrepreneurial activities in campus. Therefore, further study should take into consideration other independent variables that could play important roles in determining students' participation in entrepreneurial activities.

F-tests of significance: Table 4 shows the results of the regression equations for the entrepreneurship and studied personality traits among 1st year students at UKM. The F-ratio used to test the significance of R^2 values for the regression equation. Obviously, all three regression equations had obtained statistical significance using the F-test at the 99% confidence interval. This suggests that besides shyness does influence the students' involvement in the entrepreneurial activities indirectly, co-variances are also observed play roles in determining the dependent variable even although at the low level of relationship.

The t-test for statistical significance: It is important to test the statistical significance of each of the individual paths postulated within the model. The t-test was used and the score for each of the paths are given in brackets under the path coefficients as showed in Fig. 1. It was

clearly observed that all paths created in the model achieved statistical significance at the 0.01% confidence level. If both F- and t-test are combined, the above analysis indicated that all factors, i.e., Artistic (AC), Social (SOC), Self-Esteem (SE) and Shyness (SY) had significant effects on the students' Entrepreneurial activities (ET) with varying degrees of relationships. Although, shyness has less direct effect on entrepreneurial activities, its combination with other factors can produce quite significant effect such as with social and self-esteem factors.

Basically, these two factors, i.e., social and self-esteem are strongly factors that can change the degree of students' shyness. Therefore, this path analysis provides a good example how the other variables can influence the students' involvement in the entrepreneurial activities even though shyness characteristic prevailed among the students.

CONCLUSION

This study was examined the possible influential factors of the involvement of the UKM 1st year students in entrepreneurial activities. By using the path model, it was observed that the most influential factor on students' entrepreneurial activities (direct and indirect effects) was social behavior with the path coefficient of 0.35. Even though, shyness has a small negative path coefficient, i.e., -0.08, it agreed with the assumption that by reducing this students' personality trait it will increase the involvement of students in entrepreneurial activities while they are in campus.

The three regression equations have produced small value of R^2. However, these values are significant at the required level of 0.01.

It can be said that the other unexplained variances should be considered in future research on the students' involvement in entrepreneurial activities such as entrepreneurship education, family background, educational background and training, risk-averse attitude and risk tolerance. The results have given chances to the UKM management to carry out certain mitigation measures in order to improve future students' entrepreneurship.

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