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The Relationship of Creativity and Technopreneurship Intention

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Abstract: Creativity is the act of coming up with an idea. In order to contribute to economic growth, entrepreneurs are currently adapting creativity in their business operations. Creativity is increasingly critical to business success in order to achieve the competitive edge in the aggressive business world. Thus, realizing the importance of this criterion, this study seeks to find out level of creativity of science and technology (S&T) cluster students' of University Technology Mara (UiTM) and how does it affect them in terms of technopreneurship intention. The outcome of this study will illustrate whether S&T cluster students of UiTM have the creativity level in becoming the future technopreneurs and their ability to survive by adapting creativity and innovation at their workplace. It is found that creativity does impact one's entrepreneurial intention and should be considered as part of the overall analysis in identifying one's entrepreneurial competencies.

Keywords: Technopreneurship, entrepreneurship, creativity, intention, students.

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INTRODUCTION

In recent years, the increasing numbers of technology businesses that contribute to the economy and create jobs are also due to technology entrepreneurial activities/programs initiative in the university (David F, Scott A, Karen S, 2003). Hence, academics are aware that creativity involves in encouraging an entrepreneurial mindset among students. Creativity is considered to be crucial for the management field (R.A. Proctor, 1991) and it becomes a serious investment due to the important role that creativity plays for the firms as they strive for continuous flow of innovations (Stenberg, O'Hara, & Lubart, 1997). Other than that from a social development standpoint, creativity can also be seen as a vital source for economic growth, economic competitiveness, job creation and the advancement of social interest (European Commission, 2003; Linan, et al., 2005). Hence, in light of the increasing importance creativity, this study was undertaken to specifically look into understand the level of creativity among S&T students of UiTM and to examine whether creativity has a definite link with technopreneurial intention in which can contribute students to establish, manage and support sustainable ventures.

PROBLEM STATEMENT

There are a number of researches that studied the relation between creativity and entrepreneurship as well as technopreneurship. However there are none that really focuses on the specific creativity traits that actually affect the inclination of students to choose to be a technopreneur. Hence, this study will examine the type of personality traits of creativity that actually affect students towards technopreneurship intention.

LITERATURE REVIEW

Entrepreneurship has long been acknowledged as a major force for economic development (Schumpeter, 1934). entrepreneur is an innovator that creates and exploits opportunity, consequently creating value and change towards the economy and society (Rahim and Mohtar, 2015). In order to do that, an entrepreneur needs to be creative.

Research on the concepts of creativity and entrepreneurship which originated from a wide and often diverse fields and disciplines, such as psychology, history led to the birth of opposing views and the understanding of them (Runco, 2004). Despite the multitude of opinion on both subjects, some common themes seem to prevail. Creativity can be generally defined as "a combination of novelty and appropriateness and has been associated with problem solving and novelty generation as well as reactive and adaptive behavior that allows people to come up with turbulent environments" (Berglund and Wennberg, 2006) while entrepreneurship is defined along the lines of creating of something of recognized value around a perceived opportunity (Bolton and Thompson, 2000).

Early research on creativity has focused on the characteristics of trait of creative individual (Matthews, 2007). Later on, the body of knowledge expands and includes the process, product, as well as the press approaches to creativity. Process approaches to creativity looks into the behavioural aspects which includes creative thinking and techniques, product approaches looks at creative products – assuming that the products can give insights on creative quality and quantity while press approaches looks into factors outside the individuals that affects creativity such as working environment and social relationships. (Berglund and Wennberg, 2006).

A recent study on creativity argues for a consideration on the domain specificity and the existence of different levels of creativity (Kaufman et al, 2009). Which basically states that one can be highly creative in an area (e.g: playing the piano) but be a creative dud on another (e.g: drawing) and it is possible to develop multi area creativity with proper training and identification early in an individual's development.

Similar to the research development of creativity, the study of entrepreneurship initially focused on discovering the characteristics or traits of an entrepreneur (Mathews, 2007). Later the study of the area began to branch out and develop into two main areas. One remains at the study on explaining the entrepreneurial characteristics and why a person decides to be an entrepreneur while the other is the study on the structural variations on certain geographical areas such as the impact of tax breaks, scale economies or population density that contributes to the establishment of new firms or entrepreneurs (Lee, Florida and Acs, 2004).

Entrepreneurship has long been associated with creativity and it's hard not to include creativity in any form of discussion on entrepreneurship. If creativity means coming up with something that is novel and of value then entrepreneurship also requires the creation of novelty in business that can create some form of value to the business owner and customers (Mathews, 2007).

Despite the close resemblance of entrepreneurship and creativity, little research has been done on the impact of creativity on entrepreneurial intention. The question is, is it possible that creativity contributes to ones entrepreneurial intention and be used as criteria to identify potential entrepreneurs? Further to that, since creativity is complex with multiple components, we are interested in knowing which of these individual components within creativity that actually affects entrepreneurial intention.

Despite the research scarcity, several researches have made significant inroads establishing the connection between creativity and entrepreneurial intentions. In a research done on the connection between social characteristics and new firm formation at selected geographical areas within the United States, it was found that social diversity and creativity has a positive relationship with new firm formation (Lee, Florida and Acs, 2004). This is in line with the findings of Griffith et. al (2009) that state strong national innovation ecology will lead to the creation of new business ideas and growth opportunities. In another study done on 199 Greek Universities students, it was found that aside from proactively, creativity has direct bearing on entrepreneurial desirability; a precursor to entrepreneurial intention (Zampetakis, 2008). This was further supported by studies done by Berglund et. al (2008) that high scores on creativity test is positively correlated to entrepreneurial intention and suggested that consideration should be given to creativity in models of entrepreneurial intentions.

Today, creativity can be found as an essential element not only in entrepreneurship but also for technopreneurship. But according to many researchers there are various reasons why people venture into business. Vesper (1980), mentioned that there was no single orientation that explained an individual's proclivity toward an entrepreneurial

career. Some start a business because they enjoy developing a new technology others do so because they enjoy building and owning their own company. Still others enjoy starting new ventures but dislike managing them.

Many universities have focused more on linkages of entrepreneurship with initiatives done through entrepreneurship programs, activities, curriculum etc. For instance, School of Engineering at University of Maryland has made a substantial progress towards culture building, self-help resources and hands-on venture formation to its engineering students with the aim to make them to be more entrepreneurial.

Feldman and Bolino (2000), concluded that individuals with a strong creativity anchor were motivated to become self-employed. However, Lee and Wong (2004), concluded that there is not enough support for the hypothesis that among research scientists and engineers, those with a strong creativity anchor would have greater intentions to form a new business. Falat (2000), points out that creative thinking can influence the way an individual copes with frustrating situations. He concludes that those with high creativity utilized significantly more active strategies in coping with frustrating situations.

Therefore, this study attempts to examine the degree of creativity that individual (student) holds and hopefully enrich the findings on the relationship between creativity and technopreneurship intention.

RESEARCH DESIGN

A questionnaire survey was developed in order to examine the linking of creativity with technopreneurship intentions. The questionnaire contained 3 sections in which the first section constructs on 8 demographic variables, followed by 6 items in entrepreneurial intention and 35 items on creativity stands respectively. 5-points Likert-scale were used for the questions. The sample consisted of 226 randomly selected science and technology undergraduate students of UiTM Shah Alam The creativity anchor was evaluated by seven variables. The creativity factor was measured by the mean value of five-point Likert-type scaled items from the factor analysis that assessed student's creative consciousness, levels of curiosity, pattern breaking skills, idea nurturing ability, willingness to experiment, courage and resilience; and energetic persistence. The dependant variable is the technopreneurship intention of the students from science and technology cluster.

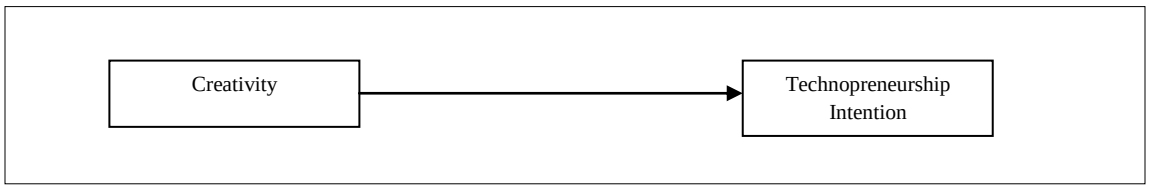

Figure 1: Conceptual Framework

Research Objectives

The main objectives of the study are as follows:

1. To identify level of creativity among Science and Technology undergraduates of UiTM.
2. To determine relationship between creativity and technopreneurial intention among undergraduates of UiTM.

Research Questions

1. What is the level of creativity among Science and Technology undergraduates of UiTM
2. Is there a relationship between creativity and technopreneurial intention among undergraduates of UiTM

Research Hypothesis

H_0: There is no significant relationship between creativity and technopreneurship intention

H_1: There is significant relationship between creativity and technopreneurship intention

FINDINGS

Demographic Analysis

From the table below (Table 1), it is observed that the gender distribution is fairly equal with 51.8 percent of them being male while female stands at 48.2. Majority of these respondents were also originated from the Middle Region of Malaysia which covers Perak, Selangor and Negeri Sembilan states at 42 percent of the respondents. This is followed equally by students that originated from the South and East Coat of Malaysia at 19.9 percent each while those from the Northern region came in at 12.4 percent; the people from Sabah and Sarawak makes up the rest of the respondents at percent. From the faculties standpoint, we observed that majority of the respondents comes from the engineering faculty (42.5 percent) followed by the computer science and mathematics (35.8 percent), applied science (13.3 percent) and sport science (8.4 percent). 62.4 percent respondents have none of their family members involve in business while 39.8 percent of the students are personally involved in business while currently studying.

Table 1: Summary of Selected Descriptive Information Gained

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	117	51.8	51.8	51.8
	Female	109	48.2	48.2	100.0
State/ Region of Stay	Northern Region	28	12.4	12.4	12.4
	Southern Region	45	19.9	19.9	32.3
	Middle Region	95	42.0	42.0	74.3
	East Coast	45	19.9	19.9	94.2
	Sabah	5	2.2	2.2	96.5
	Sarawak	8	3.5	3.5	100.0
Faculty	Engineering	94	42.5	42.5	42.5
	Computer Science and Mathematics	81	35.8	35.8	78.3
	Applied Science	30	13.3	13.3	91.6
	Sports Science	19	8.4	8.4	100.0
Involvement of family in business	YES	85	37.6	37.6	37.6
	NO	141	62.4	62.4	100.0
Personal involvement in business	YES	90	39.8	39.8	39.8
	NO	136	60.2	60.2	100.0

A descriptive statistics of the respondents technopreneurial intention and creativity scores are shown in the table below (Table 2). It is observed that the mean score on technopreneurial intention is 3.4447 on a 5 point scale which indicates that generally the respondents are inclined towards becoming an entrepreneur. Similar observation is also found in the average creativity score where on average the respondents' score are at 3.7291 on a 5 point scale.

The dispersion on technopreneurial intention is found to be much higher than creativity score at a standard deviation of 0.80447 and variance of 0.647 for technopreneurial intention while creativity stands at 0.42035 for standard deviation and 0.177 on variance.

The skewness of the respondents' distribution reflects the higher mean score on both measures at -0.173 for technopreneurial intention and -0.181 for creativity. Kurtosis for entrepreneurial intention is close to normal where the score observed were 0.08 while creativity has a slight peakness in its distribution with a kurtosis score of 0.655.

Table 2: Summary of Distribution Information of Techno-preneurship Intention and Creativity

	Average Intention Score	Average Creativity Score
Valid	226	226
Missing	0	0
Mean	3.4447	3.7291
Std. Error of Mean	.05351	.02796
Median	3.4167	3.7143
Mode	3.00	3.94
Std. Deviation	.80447	.42035
Variance	.647	.177
Skewness	-.173	-.181
Std. Error of Skewness	.162	.162
Kurtosis	.008	.655
Std. Error of Kurtosis	.322	.322
Minimum	1.33	2.06
Maximum	5.00	4.89

Reliability Analysis

A reliability test of technopreneurial intention and creativity questions entails the following results as shown in Table 3. Both variables score very highly on reliability scores with a score of more than 0.9 which indicates that the questionnaire has a high internal consistency.

Table 3: Reliability Analysis of the Variables

	Cronbach's Alpha	N of Items
Entrepreneurial Intention	.931	35
Creativity	.936	6

Pearson Correlation Analysis

Table 4: Correlation of Intent and Creativity

		Intent	Creativity
Entrepre-neurial Intention	Pearson Correlation	1.000	.272**
	Sig. (2-tailed)		.000
Creativity	Pearson Correlation	.272**	1.000
	Sig. (2-tailed)	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

In exploring the relationship between creativity and technopreneurial intention, Pearson Correlation test is done between the two variables. The results observed were quite encouraging as it was found that there is a significant correlation at 0.01 level between creativity and technopreneurial intention. However, the correlation is rather weak with a score of 0.272 (Table 4).

Multiple Regression Analysis

In further exploring the relationship between creativity and technopreneurial intention, a regression analysis is done to see the extent creativity explains one's technopreneurial intention. In this analysis, we assume that there is a linear relationship between these two variables. The results are as follows:

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.272[a]	.074	.070	4.65513

a. Predictors: (Constant), Creativity

Table 5b: ANOVA[b]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	387.982	1	387.982	17.904	.000[a]
Residual	4854.128	224	21.670		
Total	5242.111	225			

a. Predictors: (Constant), Creativity

b. Dependent Variable: Entrepreneurial Intention

Table 5c: Coefficients[a]

Model	Unstandardized Coefficients		Standar-dized Co-efficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	9.019	2.771		3.255	.001
Creativity	.089	.021	.272	4.231	.000

a. Dependent Variable: Entrepreneurial Intention

Looking at model summary, we find that the Adjusted R-squared score is 0.07 which basically indicates that creativity only explains 7% of the variations that is observed in one's technopreneurial intention. Despite the low Adjusted R-squared score, the regression model suggests that creativity significantly affects technopreneurial intention at 0.01 significant level. This finding corresponds well with what found in the correlation analysis where it was found that there is a significant relationship between these two variables.

We are also interested in seeing whether such observation would remain the same should we also include other factors into consideration. In other words, we are trying to see if the relationship between creativity and

technopreneurial intention would remain the same if one's faculty, gender, region of origin, family and personal involvement in business are taken into consideration.

To do this, an analysis of covariance needs to be done as the factors included as independent variables are a mix of nominal and scale data. In SPSS, this analysis is done using the General Linear Model. Nominal data would be classified as factors while creativity score is classified as a covariate. The results of the analysis are as follows:

Table 8: ANCOVA of all Information Obtained from the Research

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	27.385[a]	12	2.282	4.111	.000
Intercept	6.579 \	1	6.579	11.852	.001
Gender	.926	1	.926	1.668	.198
Region of Origin	5.783	5	1.157	2.084	.069
Faculty	6.319	3	2.106	3.795	.011
Family Involve-ment in Business	1.260	1	1.260	2.270	.133
Involve-ment in Business	.558	1	.558	1.005	.317
Creativity	7.602	1	7.602	13.695	.000
Error	118.229	213	.555		
Total	2827.306	226			
Corrected Total	145.614	225			

a. R Squared - .188 (Adjusted R Squared = .142)

From the results above, regardless whether other factors are included in the model, creativity still remains a significant relationship with technopreneurial intention. Other than that, the inclusion of other factors have increased the adjusted R-squared score to 0.142 from 0.07.

CONCLUSION

The findings of this research seem to agree with the recent findings such as Zampetakis (2008) and Berglund et. al (2008) which suggested that creativity does have an impact on one's desirability to be an entrepreneur or in this case a technopreneur. Even though the research suggests that the impact may be small but since creativity increasingly important in ensuring business success, creativity may no longer be ignored as an indicator for entrepreneurship intention. It could be might as well be the reason for a ventures sustainability and success. Furthermore, it is suggested that further research should be done in which specific aspect of creativity that really impacts entrepreneurial intention.

REFERENCES

Berglund H. and Wennberg K. (2006) Creativity Among Entrepreneurship Students: Comparing Engineering and Business Education, International Journal Continuing Engineering Education and Lifelong Learning, Vol. 16, No. 5 pp. 366 – 379.

Berglund et al. (2008) Creativity In Entrepreneurship Education, Journal of Small Business and Enterprise Development, Vol. 15 No. 2, pp. 304 - 320.

Bolton W.K. and Thompson J.L. (2000), Entrepreneurs: Talent, Temperament, Technique.

David F., Scott A. and Karen S. (2003), Holistic Approach for Technology Entrepreneurship Education in Engineering, Proceedings of the 33rd ASEE/IEEE Frontiers in Education Conference, Colorad, USA, November 2003, Session T2D

European Commisssion (2003), Green Paper – Entrepreneurship in Europe, Enterprise Publications, Brussels.

Danield C., Feldman and Mark C Bolino (2000), Career Patterns of the Self-Employed: Career Motivations and Career Outcomes, Journal of Small Business Managemement.

Griffithset et al. (2009) Innovation Ecology As A Precursor to Entrepreneurial Growth, Journal of Small Business and Enterprise Development, Vol. 16 No. 3, pp. 375 - 390.

Guilford W. (1951) Creativity, American Psychologist, 5, pp 444 - 454.

Kaufman, J.C. (2009) Creativity Polymathy: What Benjamin Franklin can teach your kindergartener Learning and Individual Differences, doi:10.1016/j.lindif.2009.10.001

Lee S.Y. et al. (2004) Creativity and Entrepreneurship: A regional analysis of new firm formation. Papers on Entrepreneurship, Growth and Public Policy.

Linan F., Rodriguez-Cohard J.C., Rueda-Cantuche J.M. (2005), Factors Affecting Entrepreneurial Intention Levels, Paper presented at the 45th Congress of the European Regional Science Association, Amsterdam, August 2003.

Matthews, Judith H. (2007) Creativity and Entrepreneurship: Potential Partners or Distant Cousins? Proceedings Managing Our Intellectual and Social Capital: 21st ANZAM 2007 Conference, pp. 1 – 17, Sydney, Australia.

Nor Aishah Buang (2002), Asas Keusahawanan, Shah Alam, Fajar Bakti Sdn Bhd.

Proctor R.A. (1991), The Importance of Creativity in Management Field, British Journal of Management, John Wiley and Sons.

Rahim H.L. and Mohtar, S. (2015). Social Entrepreneurship: A Different Perspective. *International Academic Research Journal of Business and Technology* 1(1): 9-15

Runco, M (2004) Creativity, Annual Review of Psychology, Vol 55, pp. 657-687

Sternberg R.J (2006), The Nature of Creativity, Creativity Research Journal, Vol 18 No. 1 pp. 87-98.

Thompson J.L. (2004) The Facets Of The Entrepreneur: Identifying Entrepreneurial Potential, Management Decision, Vol. 42 No. 2, pp. 243-258.

Tow K.K. (2004), Developing Entrepreneurial Skills, Petaling Jaya, Leeds Publications.

Vepser K.H. (1980), New Venture Staretiges, Engelowood Cliffs: Prentice Hall.

Zampetakis L. (2008) The Role of Creativity and Proactivity on Perceived Entrepreneurial Desirability, Thinking Skills and Creativity pp.154–16.