

## **Factors Affecting Entrepreneurial Intention Among Graduate Students of Universiti Teknologi Malaysia**

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### **Abstract**

*This paper empirically assesses the relationship of entrepreneurial intention and its antecedents among graduating students of UTM. This study is based on the models developed by Davidsson [7] and Autio et al. [1]. Research framework has utilized the modified version of the original study. Work experience, vicarious experience, general attitude, image of entrepreneurship and other demographic variables are tested against entrepreneurial conviction and entrepreneurial intentions. This study supports the proposition that conviction is the strongest variable that has direct influence towards entrepreneurial intention, whereas general attitude has a significant influence as well as those male students with work experience were found to have higher entrepreneurial intention. Based on the outcomes of the study, the paper is concluded by giving the recommendations and a finalized model of entrepreneurial intention.*

**Keywords:** Entrepreneurial conviction, entrepreneurial intention, entrepreneurship, demographic variables.

### **1. Introduction**

Entrepreneurship is recognized as an important source of job growth and economic development of a country. The rate of growth for entrepreneurship varies from country to country as well as from time to time for the same country. But the established fact is that it has a clear and positive impact on economic growth. The entrepreneur is the driving force behind the economic development of countries [20]. Moreover economic development within Schumpeter's framework is not a harmonious phenomenon but rather a disturbance of the status quo, making the entrepreneur a heroic maverick. Therefore, the entrepreneur in Schumpeter's context is an innovator that is able to carry out new combinations which causes the discontinuous economic evolution [11].

Therefore, some scholars define entrepreneurship as the agent for the creation of new business and enterprise [14]. This definition emphasizes a growing awareness that entrepreneurship is a process of ‘becoming’ rather than a state of ‘being’. However, most of the studies typically identify pre-existing entrepreneur and established ventures while neglecting a large pool of potential entrepreneurs, i.e., students. It seems questionable to generalize the findings with regards to graduates and on-going students. [19] Furthermore the variation of both students and graduates population affect a variety of important entrepreneurial characteristics which in turn would lead to inconsistent results. The empirical research has seldom explored students as entrepreneurial subjects. The few findings that exist are partly inconsistent [19]. Consequently, there is a lack of understanding how public policies and universities can effectively develop future high-tech business founders [14].

This study was conducted to answer following six questions and to provide new insights concerning this vacant gap in the “entrepreneurship study in the era of globalization, and knowledge based-economy”, where the Malaysian government has placed greater emphasis on promoting high-growth, high-tech start-ups by highly educated professionals. Consequently, there is a need for many entrepreneurs to be involved actively in the economic development in order to meet the market demands and to sustain competency in the fast pace of technology change. The assessment of entrepreneurial intention among the university students is a necessity in order to identify their level of entrepreneurial orientation. This group of people is very crucial as the springboard or backup to the current entrepreneurs in Malaysia’s high-tech industries. A majority of these students will immediately contribute more to the economic growth after they graduate, not as salary workers but as entrepreneurs. Could it be that Malaysian university students lack entrepreneurial orientation and intention? What factors would enhance students’ interest towards active entrepreneurial participation? What demographic factors influence entrepreneurial orientation?

## 2. Literature Review

Entrepreneurial intention is the state of one’s mind to foster the new business or venture creation. Entrepreneurial conviction is a measure of the perceived ease of starting up a new firm as well as to the perceived feasibility of such a choice [1]. However, a person will only initiate entrepreneurial actions when one’s entrepreneurial conviction is high in relation to the perceived requirements of a specific opportunity. Past studies have proven that conviction stands out as the primary explanation and determinant of entrepreneurial intentions [2; 3; 7].

During recent years, the process-based approach of studying entrepreneurial intentions has become increasingly used [13; 1; 7; 18]. Moreover intentionality is grounded on cognitive psychology that attempts to explain or predict human behavior [12]. Similarly, attitudes towards entrepreneurship (perceived feasibility and perceived desirability) should be partially derived from prior exposure to entrepreneurial activity. It affects intention and thus behavior through changing attitudes [22]. Model of new-venture initiation proposes that the decision to initiate new venture requires two things. Firstly, the individuals should have intentions towards entrepreneurship and the perception that starting a new venture is credible. Secondly, the new venture initiation requires some kind of precipitating event. Credibility requires at least a threshold level of perceptions of feasibility and desirability with some propensity to act upon the opportunity [22].

Economic-psychological model of factors which influence individuals’ intentions to go into business has been quoted more often as compared to previous models [7]. It is proposed that personal background variables affect both general attitudes (i.e., general psychological dispositions) and domain attitudes (or specific attitudes towards entrepreneurship) while the central role of conviction was, as the primary determinant of intention. At the same time the personal background variables affect both general and domain attitudes [7].

For instance some modifications to Davidsson’s model to account for the characteristics of university students and the university environment based on students of technology from Finland, Sweden, USA, and South-East Asia. A larger and varied population base implies stability of the model, as well as allows the comparison of pervasiveness of entrepreneurial intent among students in different countries [1]. Unlike the other model which was tested on a random sample of 1,313 Swedes between the ages of 35 and 40, [1] concluded that attitudes act as the link between personality traits, attitudes and entrepreneurial intention, i.e., the characteristics of the individual which directly influence the intention to become an entrepreneur through their effect on attitude. At the same time, image of entrepreneurship has a direct influence on entrepreneurial conviction [1].

Entrepreneurial intention study among the university students at the MIT School of Engineering. The structural model of entrepreneurial intent consists of three main components: personal traits, attitude, and intention towards entrepreneurial behaviors. The model proposes that the intention to become a business founder is moderated by the attitude about entrepreneurship. Their model proposes a direct impact of the perceptions of contextual factors on entrepreneurial intentions. Hence, the environment is assumed to be responsible for the lack of a perfect attitude-intention correlation. A student might be willing to set up a company (regardless of his comparatively bad attitude towards entrepreneurship) because he perceives the founding conditions are very favorable (trigger-effect). Inversely, graduates with a positive attitude towards new venture creation may not decide to start their own business due to a negative perception of salient factors in the environment. This line of reasoning is known in attitude models as the contextual influence on the attitude-behavior-relationship [15].

The research model for this study is based on a sample of graduating students from Universiti Teknologi Malaysia (UTM) and is adopted from studies by [7] and [1] as well as Othman and Wan Jusoh (2004). While [16] had adopted Davidsson's (1995) model in their research, this study had retained most of the critical components presented in models developed by [7] and [1] in order to determine the direct influence of personal background on entrepreneurial intention, which to the opinion of the authors, is a central theme of this study.

### 3. Methodology

This study can be categorized as an exploratory field study. This investigation adopted the survey developed by [7] and [1] as well as Othman and Wan Jusoh (2004). The data was obtained from graduating students at the Faculties of Engineering, Education, Management and of Social Science in UTM. A total of 400 undergraduate students were targeted to participate in this study. The author used quota sampling technique (25% each faculty) to ensure fair representation of the population due to the dominance of members of certain faculties. A 79.5% response rate (318 out of 400 possible respondents) was obtained. The gender composition of the sample was 37.11% male (N = 118) and 62.89% female (N = 200), race composition was 48.74% Malay (N = 155) and 51.26% Non-Malay (N = 163), the field of study composition was 49.37% engineering (N = 157) and 50.63% non-engineering (N = 181), experience composition was 52.83% none (N = 168) and 47.17% some (N = 150), and parent's occupation was 59.74% employees (N = 190) and 40.26% self-employed (N = 128).

A set of questionnaire anchored on five-point scales is designed as to measure the attributes of social content, image of entrepreneurship, general attitudes, conviction and intention [19,1]. The interplay between the aforementioned constructs was incorporated with following null-hypotheses accordingly:

- H1:** There is significantly difference in Entrepreneurial Intention by Race
- H2:** There is significantly difference in Entrepreneurial Intention by Field of Study
- H3:** There is significantly difference in Entrepreneurial Intention by Work Experience
- H4:** There is significantly difference in Entrepreneurial Intention by Gender
- H5:** There is significantly difference in Entrepreneurial Intention by Parent's Occupation

#### 3.1 Statistical Analysis

Descriptive, factor and reliability analyses as well as regression analysis and independent sample t-tests were primarily used for this study. Descriptive analysis was performed on the personal background of the students. Factor analysis was employed to reduce the variables that were used to measure the constructs for general attitudes (achievement motivation, autonomy, change, competitiveness, and money), image of entrepreneurship (Pay off, perceived desirability, societal contribution, and know how), social context (university environment), entrepreneurial conviction, and entrepreneurial intention. [6] propose the factors obtained to be tested for internal consistency of the five-point scaled items based on a reliability coefficient (Cronbach's alpha) to determine whether or not the items are reliable to use by assessing the consistency of homogeneity among items. [7] instrument has registered a range of alpha value in between 0.52 to 0.77 for the determinants of entrepreneurial intentions. After validity and reliability analyses, the factors were further tested using regression analyses and independent sample t-tests based on above null hypotheses. For all cases of hypotheses testing, a *p*-value which is less than 0.05 will result in the rejection of the null hypothesis and vice versa.

**Table 1: Comparison of Cronbach's  $\alpha$  values between current and previous studies**

Finalized Construct	Total Variables	Factored Components	Cronbach's $\alpha$ value		
			Current Study	Othman and Wan Jusoh (2004)	Autio <i>et al.</i> (1997); and Davidsson (1995)
Entrepreneurial Intention	3	Intent 1-3	0.722	0.7085	-
Need of Achievement	4	Achieve 1-4	0.763	0.8372	0.60
Autonomy	4	Auto 1-4	0.713	0.9207	0.60
Change	4	Change 1-2 Change 3-4	0.753	0.5625	0.58
Competitiveness	5	Compete 1-3 Compete 4-5	0.702	0.6937	0.76
Value for Money	5	Money 1-2,5 Money 3-4	0.723	0.6886	0.70
Image of Entrepreneurship	6	Image 1-6	0.711	0.6178	0.70
Entrepreneurial Conviction	5	Convict 3-5 Convict 1-2	0.770	0.7568	0.77
University Environment	6	Educa 1-6	0.803	0.8499	0.67

**Table 2: Results of Independent Sample T-test**

Difference in Entrepreneurial Intention by Race					
	Malay	Non-Malay	p-value	Decision	Conclusion
N	155	163			
Mean	59.7312	61.6564	0.391	Fail to reject Ho	There is insufficient evident to show that there is difference in Entrepreneurial Intention by Race
Std. Deviation	20.4966	19.5004			
Std. Error Mean	1.6463	1.5274			
Difference in Entrepreneurial Intention by Field of Study					
	Engineering	Non-engineering	p-value	Decision	Conclusion
N	157	161			
Mean	60.6688	60.7660	0.965	Fail to reject Ho	There is insufficient evident to show that there is difference in Entrepreneurial Intention by Field of Study
Std. Deviation	18.8910	21.0538			
Std. Error Mean	1.5077	1.6593			
Difference in Entrepreneurial Intention by Work Experience					
	None	Some	p-value	Decision	Conclusion
N	168	150			
Mean	59.1270	62.5000	0.013	Reject Ho	Students with some work experience have higher Entrepreneurial Intention than students with no work experience
Std. Deviation	19.7968	20.1076			
Std. Error Mean	1.5274	1.6418			
Difference in Entrepreneurial Intention by Gender					
	Male	Female	p-value	Decision	Conclusion
N	118	200			
Mean	62.3588	59.7500	0.021	Reject Ho	Male students have higher Entrepreneurial Intention than female students
Std. Deviation	18.3202	20.8875			
Std. Error Mean	1.6865	1.4770			
Difference in Entrepreneurial Intention by Parent's Occupation					
	Employee	Self-employed	p-value	Decision	Conclusion
N	190	128			
Mean	60.7895	60.6120	0.938	Fail to reject Ho	There is insufficient evident to show that there is difference in Entrepreneurial Intention by Parent's Occupation
Std. Deviation	19.9895	20.0534			
Std. Error Mean	1.4502	1.7725			

**Table 3: Results of Regression Analysis**

Factors (independent-dependent)	Current Study			Study by Othman and Wan Jusoh (2004)		
	r	r <sup>2</sup>	p value	r	r <sup>2</sup>	p value
Conviction– Intention	0.675	0.456	0.000	0.590	0.348	0.000
Intention– Education Environment	0.341	0.116	0.000	0.181	0.033	0.001
Education Environment– Conviction	0.210	0.044	0.000	0.161	0.026	0.004
Conviction– Image	0.407	0.166	0.000	0.404	0.164	0.000
General Attitude – Conviction	0.419	0.176	0.000	0.535	0.286	-

#### 4. Discussions

The analysis confirms many previous findings presented in the literature review. The findings provide support for the usability of the process approach to analyzing entrepreneurial behavior. It has been demonstrated that the intention model in this study is a rigorous framework when it comes to explaining or predicting variations in entrepreneurial intentions. The results show that there are significant and positive relationship between all the independent variables, including image of entrepreneurship, education environment, conviction, and the dependent entrepreneurial intention. The results firmly support the relationship suggested by the models developed by [1;7;2;13 and 8].

Based on the second column of Appendix-2, entrepreneurial conviction has the strongest direct relationship with entrepreneurial intention based on the highest r value of 0.675. This finding is similar to the previous study done by [7] and [1]. The studies by [8] and [22] also revealed that self-efficacy (in this context it is synonymous with Davidsson's conviction) explain to a large extent, the variations in entrepreneurial intentions. Hence, a strong self-perception of entrepreneurial capability (high conviction) with a high level of goal setting and goal commitment appear to influence the intention to embrace entrepreneurial behavior.

The entrepreneurial intention has a positive and significant relationship with university environment and thus confirming the finding that the role of entrepreneurship education has been recognized as one of the critical factors that help the students to understand and foster an entrepreneurial attitude. This finding is confirmed by study by [16] and [23]. Thus it is insufficient for university to just introduce courses on theory emphasizing entrepreneurship, but it needs to develop suitable educational programs to prepare students for future entrepreneurship.

The model constructed in the study has also policy implications. There are numerous policy initiatives, such as business incubator programs, that support the emergence of new, technology-based firms from universities. According to [1], such programs try to influence behavior only, not intent and other cognitive factors that influence behavior. The findings of the study provide pointers for expanding the scope of policy initiatives.

This study indicates that only two demographic variables, i.e., gender and work experience, are found to have influence on the entrepreneurial intention. This finding is consistent with a study by [5] who found that males rated financial success and innovation significantly higher than did females. In addition, a study by [24] was able to present the implications of self-confidence in skills and entrepreneurial intention for undergraduates relate to the types of work they experience, including for technically educated students the closeness of the work to the content of their science and engineering courses of study. There is no other support found to show the influence of other demographic variables, such as race, field of study, and role model (parental occupation) on entrepreneurial intentions.

#### 5.1 Implication

The university should be involved in an early stage in the education of upper level students in order to make them more aware of entrepreneurship as a career alternative. Attitude towards career alternative constitutes an important part which has been developed during one's study. Therefore, if a student is not fully aware of entrepreneurship as an alternative, the student will never develop a positive attitude towards it. The student will instead develop a positive attitude towards employment career alternatives with which he is very familiar.

Therefore, according to [16] and [23], public policies and universities planners should intensify their activities to implement educational, research and resource programs on entrepreneurship for technical students. These programs have been successfully implemented among engineering students in Massachusetts Institute of Technology (MIT) based on a study by [15] whereby many students become entrepreneurs immediately after graduation.

Due to the influence of education on the attitudes and aspirations of youths, it is important for the government and university policy makers to understand how to develop and nurture potential entrepreneurs even while they are still students. While this study focuses only on students of UTM, the findings are intended to advance the general level of knowledge concerning the creation of new business by highly educated and innovative youths in the fast changing economy in this era of globalization.

## **5.2 Limitations and Future Indications**

As for as, implications are concerned, it is necessary to point out some of its limitations. Current study conducted once over a period so for more reliable results later on studies should focus on longitudinal data. We used adopted questionnaire and all variables incorporated at five-point likert scale which allows the respondents to tick the options at random so there were chances of common method variance, to resolve this issue we examined reliability and normality of the survey. Future studies must focus on antisocial behaviors of entrepreneurs to draw more clear picture because majority of the researchers have focused only positive attitudes of the entrepreneurs

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