Koe *Journal of Global Entrepreneurship Research* (2016) 6:13
DOI 10.1186/s40497-016-0057-8

Journal of Global Entrepreneurship Research

RESEARCH Open Access

The relationship between Individual Entrepreneurial Orientation (IEO) and entrepreneurial intention

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Abstract

The importance of entrepreneurship to a nation development is unneglectable. Malaysian government has carried out various supporting activities to promote entrepreneurial activities in the country. However, the results were less embracing, especially among the young adults. As such, understanding of what influence young adults' intention towards entrepreneurship is important in the effort of entrepreneurship development. This study was carried out to address the university students' level of entrepreneurial intention and the influence of individual entrepreneurial orientation (IEO) on entrepreneurial intention. A questionnaire survey was conducted on 176 undergraduate students from a public university with "entrepreneurial university" status. The results indicated that university students demonstrated intention towards entrepreneurship and were quite positive towards becoming entrepreneurs. In addition, university students' entrepreneurial intention was found to be positively affected by their quality of proactiveness and innovativeness. However, risk-taking ability was not an influential factor on entrepreneurial intention. Theoretically, this paper confirmed the importance of studying EO at the individual level. Practically, it suggested that higher learning institutions should pay careful attention in designing their entrepreneurship education curriculum. Specifically, the entrepreneurship training should focus on enhancing students IEO ability and increasing their entrepreneurial intention. Recommendations for future researchers have also been put forth at the end of this paper.

Keywords: Entrepreneurial orientation, Entrepreneurial intention, Students, University

Background

Entrepreneurship is vital to a nation's economic, social and technological development. Entrepreneurs are considered growth agents of a country because they bring changes to economical, technological and organizational environments (Gaddam, 2008). Many researchers also agreed that entrepreneurs contributed positively to their countries through new ventures and jobs creations (Frederick et al. 2006; Fayolle, 2007; Baron and Shane, 2008). As such, governments around the world have elicited various efforts to encourage their people to engage in entrepreneurial activities.

Realizing the importance of entrepreneurship on nation's development, Malaysian government has also initiated various supporting schemes such as funding, physical

infrastructure and business advisory services to promote entrepreneurial activities in the country (Sandhu et al. 2011). In today's competitive job market, undergraduate students are facing difficulties in securing a job after the completion of their studies. Thus, entrepreneurship is not only a mechanism for economic development but it can also be treated as a solution for unemployment. Although both government and tertiary institutions have put forth various efforts to encourage entrepreneurship among young adults, many university graduates are lacking of interest in becoming entrepreneurs and developing young entrepreneurs remains as a challenging task (Hamidon, 2012).

Understanding of what make an individual to become an entrepreneur is important in developing new entrepreneurs. This is due to the fact that entrepreneurship is a complex process that involves entrepreneurial cognition and entrepreneurial actions (Hisrich et al. 2013). Furthermore, entrepreneurship is also an intentional and planned behavior (Hisrich et al. 2013; Krueger et al. 2000). As such, there is a need to further scrutinize entrepreneurial intention of young adults. It is a fact that there are many theories found in the entrepreneurial intention literature. Quite a number of studies have employed intention-based theories such as Theory of Planned Behavior (TPB) or Entrepreneurial Event Model (EEM) (e.g.: Koe et al. 2012; Mahmoud et al. 2015; Guerrero et al. 2008; Audet, 2004; Fitzsimmons and Douglas, 2011). However, there is a lack of consensus of the theory (Sandhu et al. 2011).

Many existing studies recognized the role of entrepreneurship education in developing entrepreneurial intention (Farashah, 2013; Kuehn, 2008). Entrepreneurship education is important in building up university students' personal entrepreneurial skills and equipping them with the required entrepreneurial competencies, such as innovativeness and risk-taking (Ferreira et al. 2012). Unfortunately, the concept of individual entrepreneurial orientation (IEO) which views risk-taking, proactiveness and innovativeness as entrepreneurial competencies has not been fully scrutinized in entrepreneurial intention studies. Questions such as are university students who have attended entrepreneurship courses possess entrepreneurial intention and are elements of IEO influence university students' entrepreneurial intention remain unanswered. As such, this study was conducted with the aims to determine the level of entrepreneurial intention of university students and to identify the influence of IEO on entrepreneurial intention.

Literature Review

Entrepreneurial Intention

Entrepreneurship is a complex process which involves various stages; whereby one of them is the formation of entrepreneurial intention (Hisrich et al. 2013). Entrepreneurship is an intentional and planned behavior (Krueger et al. 2000). The initial stage in becoming an entrepreneur is that the person shows certain level of entrepreneurial intention (Bird, 1988). It is thus believed that entrepreneurial intention precedes any entrepreneurial behavior and it is a reliable predictor of entrepreneurship. As such, understanding individual's intention towards entrepreneurship is important in developing a great number of entrepreneurs in the country because entrepreneurs are made, not born (Boulton and Turner, 2005; Mellor et al. 2009). Individuals will embark on entrepreneurship only when they demonstrate sufficient level of intention towards entrepreneurship. Furthermore, it is worth studying entrepreneurial intention because it is a reliable predictor of entrepreneurial behavior and measuring actual entrepreneurial behavior is difficult (Wu, 2010).

Individual Entrepreneurial Orientation (IEO)

Entrepreneurial orientation (EO) was a concept originated from Miller (1983) which consists of three dimensions, namely innovativeness, pro-activeness and risk-taking. It was then further popularized by Covin and Slevin (1989) in their concept of entrepreneurial strategic posture (ESP). In later years, Lumpkin and Dess (1996) further refined EO and they suggested a five-dimension model which includes autonomy, innovativeness, risk-taking, pro-activeness and competitive aggressiveness.

Throughout the years, EO has been widely recognized by researchers as a firm-level construct that determines a firm's performance (e.g.: Grande et al. 2011; Hafeez et al. 2011; Chandrakumara et al. 2011; Gupta and Gupta, 2015). For instance, by using a five-dimension EO model, Koe (2013) found that innovativeness, proactiveness, risk-taking, competitive aggressiveness and autonomy positively influenced the performance of government-linked companies (GLCs). In addition, Dada and Watson (2013) regarded EO as a holistic construct and confirmed that it positively related to financial and non-financial performance of franchise system. Similarly, EO had also found to have a positive effect on Hungarian small and medium firms' brand performance and market performance (Reijonen et al. 2015).

In recent years, researchers have suggested that EO can also be regarded as an individual-level construct (Robinson and Stubberud, 2014). Such suggestion has given new rooms to researchers to investigate EO from a new level and perspective. Extant studies which examined individual entrepreneurial orientation (IEO) agreed that IEO is a multi-dimension construct and it consists of elements similar to firm-level EO. For examples, Taiwanese franchisees' IEO of was found to be positively related to business performance (Chien, 2014). A relationship between IEO and business success was also proven by Bolton (2012).

The above studies have indeed given some new insights on IEO as an individual-level of EO. However, most of them are focusing on IEO-performance relationship. Since IEO exists at the individual level, its relationship with individual's attitude or behavior is also worth researching. Specifically, the influence of IEO on individual's entrepreneurial intention requires further examination. Moreover, since IEO is considered relatively new, researchers need to pay attention to the operationalization of its elements in their studies.

IEO and Entrepreneurial Intention

Many extant studies have found entrepreneurship education as a contributor of entrepreneurial behavior. For instance, Farashah (2013) identified that individuals who had completed entrepreneurship course would likely to have higher entrepreneurial intention. Similarly, Kuehn (2008) and Keat et al. (2011) also maintained that entrepreneurship education influenced entrepreneurial intention. In another study, Othman et al. (2015) found that the relationship between entrepreneurship education and entrepreneurial spirit was moderated by individual's internal locus of control. Undoubtedly, entrepreneurship education is aimed to encourage entrepreneurial behavior and mindset among individuals, nurture entrepreneurial individuals and creation of new ventures (Keat et al. 2011). It is believed that entrepreneurship education is important in developing individuals' entrepreneurial competencies.

EO can be considered as entrepreneurial competencies that can be learned through proper entrepreneurship education. Using EO as a construct that influenced

entrepreneurial intention was done by several researchers. For instance, Ibrahim and Lucky (2014) performed a study to determine the relationship between IEO and entrepreneurial intention among Nigerian students in Malaysia and they successfully found that IEO as a single construct was related to students' entrepreneurial intention. In another study, using Norwegian and American students as sample, Robinson and Stubberud (2014) found that students who completed the entrepreneurial course agreed that they were more creative and innovative and demonstrated higher entrepreneurial intent than before. Yurtkoru et al. (2014) supported the view that entrepreneurship is an intentional process and they further confirmed that being a risk lover and willingness to take risk positively affected an individual's entrepreneurial intention. Bolton and Lane (2012) generated, validated and tested a measurement of IEO (risk-taking, innovativeness and proactiveness). They further found significant statistically correlations existed between each of the element of IEO and entrepreneurial intention of university students. Ekpe and Mat (2012) treated EO as a multi-dimension construct and found that self-efficacy and education were having significant positive influence on entrepreneurial intention among female undergraduate students in Nigerian universities. Using working adults as sample, Kropp et al. (2008) concluded that international entrepreneurial business venture (IEBV) start-up decisions were influenced by two elements of EO, namely proactiveness and risk-taking.

Undeniably, the above studies have shed lights on individuals' ratings on EO; however, they did not reveal much about the results of the relationship between each IEO element (i.e.: innovativeness, proactiveness and risk-taking) and entrepreneurial intention. As such, the following research framework (Fig. 1) was suggested.

This study further hypothesized that:

H1: Innovativeness positively influences entrepreneurial intention.
H2: Proactiveness positively influences entrepreneurial intention.
H3: Risk-taking positively influences entrepreneurial intention.

Methods

Population, Sample and Data Collection

The purpose of this study was to examine the causal relationship between IEO and entrepreneurial intention; as such, it employed a quantitative deductive method. The population of this study comprised of final semester full-time undergraduate students of a public university with "entrepreneurial university" status. Specifically, final semester students were chosen because they had completed entrepreneurship courses and they were the potential entrepreneurs. Although the respondents came from an "entrepreneurial university", it is actually a comprehensive university which offers a wide range of courses,

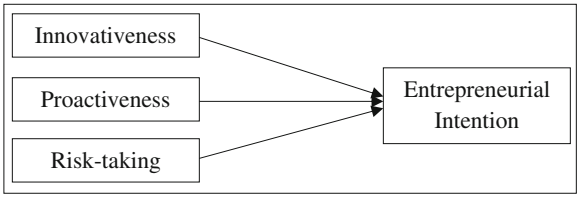

Fig 1 Research Model

ranging from sciences and technology to social sciences and humanities. This means that students registered in the university not because they wanted to be entrepreneurs; in fact, they enrolled in the university with various aims and ambitions. It was granted the "entrepreneurial university" status because it responded to the call of Malaysian government to develop graduate entrepreneurs.

This study employed proportionate stratified sampling in selecting the sample. It was done so to ensure that populations of different segments were better represented and more valuable and differentiated information could be obtained (Sekaran and Bougie, 2013). First, the sampling frame which consisted of list of final semester students was obtained from the office of academic affairs. Then, the elements were clustered into strata by faculties. Subsequently, the subjects were selected randomly from each stratum according to proportion.

As the data collection was still going on at the time this paper was written, a total of 176 usable responses were collected from three faculties. As for data collection, a survey was carried out by using self-administered questionnaire. With the helps from faculty members, the questionnaires were distributed to the students before the commencement of class and were collected at the end of the class.

Research Instrument

The questionnaire used in this study consisted of 16 items adapted from previous studies. Adapting questionnaire from previous studies was to ensure its validity and reliability. In measuring IEO, this paper considered it as a three-dimension construct which consisted of innovativeness, proactiveness and risk-taking. A total of ten items were adapted from Bolton and Lane (2012) to measure IEO. Meanwhile, six items adapted from Liñán and Chen (2009) were employed to measure entrepreneurial intention. All items were gauged on five-point Likert scale ranged from 1 = "strongly disagree" to 5 = "strongly agree". The questionnaire was pilot tested prior to the mass distribution. Consequently, feedbacks from respondents were collected and amendments were made to improve the questionnaire.

Results

Profiles of Respondents

The analyses of this study were based on the responses of 176 full-time undergraduate students. Table 1 depicts the results of respondents' background information. There were 118 female students (67.05 %) and 58 male students (32.95 %)

Table 1 Respondents' Profiles

Variables	Frequency	Percentage
Gender		
Male	58	32.95
Female	118	67.05
Faculty		
Business and management	94	53.41
Accountancy	46	26.14
Hotel and tourism management	21	11.93
Having interest in setting up own business		
Yes	102	57.95
No	74	42.05

participated in this study. It found that 94 of the students (53.41 %) were from Faculty of Business and Management, followed by 46 students (26.14 %) from Faculty of Accountancy, 21 students (11.93 %) from Faculty of Hotel and Tourism Management and 15 students (8.52 %) from Faculty of Art and Design. It was worth mentioning that more than half of the respondents were interested in setting up their own business in future ($n = 102$; 57.95 %), and the rest of them were interested in securing a job in the public sector or private sector.

Goodness of Measures

This paper performed factor analysis to determine the unidimensionality of constructs and validity of questionnaire (Williams et al. 2010). Specifically, exploratory factor analysis with principal components extraction and Varimax rotation was conducted. It was important to note that this study has also fulfilled the assumptions for factor analysis. For instance, the sample size was bigger than 50 ($n = 176$). As for factor analysis of the independent variables, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO-MSA) was 0.778; while the Barlett's Test of Sphericity was significant at p-value < 0.01. Furthermore, the cumulative percentage of variance explained was 69.316 %.

Table 2 illustrates the factor loadings of the items in three independent variables. The analysis successfully produced three components with Eigen-value-more-than-one. Items were successfully loaded into their respective factors. The first component was innovativeness (Eigen-value = 4.188) which consisted of four items. The second component was risk-taking (Eigen-value = 1.670) and the third component was proactiveness (Eigen-value = 1.074). Both components comprised of three items each. All of the items were retained because they recorded factor loading values higher than 0.50.

Table 3 shows the factor analysis results of the dependent variable, i.e.: entrepreneurial intention. The analysis successfully produced one factor. The factor loadings of all the six items were above 0.50 and thus they were retained. The Eigen-value was 4.30.

Table 2 Factor Analysis of IEO

Items	Components		
	1	2	3
Innovativeness			
Prefer unique, one-of-a-kind approach	0.786		
Favour experimentation and original approach	0.767		
Try new and unusual activities	0.758		
Try my own unique way	0.711		
Risk-taking			
Act boldly		0.813	
Invest time/money on something that yield high return		0.803	
Take bold action by venturing into unknown		0.784	
Proactiveness			
Plan ahead on projects			0.844
Prefer to step-up and get things going			0.828
Act in anticipation of future problems			0.722

Table 3 Factor Analysis of Entrepreneurial Intention

Items	Component
	1
Entrepreneurial intention	
Make every effort to start and run own firm	0.883
Professional goal is to become entrepreneur	0.867
Determined to create a firm	0.781
Ready to do anything to be entrepreneur	0.758
Very serious thought of starting a firm	0.745
Firm intention to start a firm	0.738

The KMO-MSA produced was 0.842 and the Barlett's Test of Sphericity was significant at p-value < 0.01. Meanwhile, the cumulative percentage of variance explained was 71.637 %.

Reliability is crucial in ensuring the consistency or stability of items used in the study (Sekaran and Bougie, 2013). As such, this study performed an inter-item consistency analysis and the results were summarized in Table 4. The Cronbach's alpha (α) values of variables were well above the 0.70 threshold and the results indicated that they were considered as preferable (Pallant, 2011).

Mean, Standard Deviation and Pearson Correlation

As shown in Table 5, in terms of IEO, respondents of this study rated themselves highest for innovativeness (mean = 4.610; SD = 0.696), followed by proactiveness (mean = 4.433; SD = 0.608) and risk-taking (mean = 3.883; SD = 0.786). As for their entrepreneurial intention, the mean score was 4.088 (SD = 0.677).

This study performed a Pearson product-moment correlation to determine the strength and direction of association between pairs of variables (Pallant, 2011) and the results were summarized in Table 5. The results indicated that all pairs of variables recorded a positive and significant correlation, except between risk taking and entrepreneurial intention. Specifically, entrepreneurial intention recorded strongest significant association with proactiveness (r = 0.672; sig. = < 0.01) followed by innovativeness (r = 0.467; sig. = < 0.01). In addition, the results also showed that the correlation coefficient (r) between proactiveness and innovativeness (r = 0.627; sig. = < 0.01), risk-taking and innovativeness (r = 0.283; sig. = < 0.05) and risk-taking and proactiveness (r = 0.263; sig. = < 0.05) were positive and significance. Since all the r-values obtained were less than 0.70 (highest r = 0.627); the issue of multicollinearity did not exist and multivariate analysis was deemed appropriate (Pallant, 2011).

Results from Table 5 indicated that multicollinearity was not an issue in this study. It was proven again because the tolerance values were greater than 0.10 and the variance inflation factor (VIF) values were lower than 10 (Table 6) (Pallant, 2011). As such,

Table 4 Reliability Analysis

Variables	No of Items	Cronbach's Alpha
Risk-taking	3	0.766
Innovativeness	4	0.843
Proactiveness	3	0.758
Intention	6	0.864

Table 5 Mean, Standard Deviation and Correlation Analysis

	Mean	SD	Inno	Pro	Risk	Intent
Inno	4.610	0.696	1			
Pro	4.433	0.608	0.627 [a]	1		
Risk	3.883	0.786	0.283 [b]	0.263[b]	1	
Intent	4.088	0.677	0.467 [a]	0.672 [a]	0.143	1

[a] Correlation is significant at the 0.01 level (2-tailed)
[b] Correlation is significant at the 0.05 level (2-tailed)

multiple linear regression analysis was considered appropriate to determine the influence of IEO on entrepreneurial intention and to test the hypotheses developed.

Based on the results in Table 6, the F-statistics (14.859; sig. = < 0.01) revealed that the data statistically fitted the model well. Thus, the relationship between IEO and entrepreneurial intention was statistically significant. Furthermore, the R-squared (0.457) indicated that 45.7 % of variance in entrepreneurial intention was explained by IEO; while other factor accounted for the remaining 54.3 %. The results also showed that out of the three elements of IEO, proactiveness ($\beta = 0.631$, $p < 0.01$) and innovativeness ($\beta = 0.585$, $p < 0.01$) were positively and significantly influencing entrepreneurial intention. Proactiveness was more a more important factor than innovativeness. However, risk-taking ($\beta = 0.047$, $p > 0.05$) was not a factor influencing entrepreneurial intention. As such, H1 and H2 were supported but H3 was not supported.

Discussion

The analyses performed in this study revealed that undergraduate students demonstrated their intention towards entrepreneurship. In other words, the students were positive in becoming entrepreneurs. The mean score of entrepreneurial intention (4.088) was higher than the previous studies, for examples Sandhu et al. (2011) obtained >3.70 and Koe and Zaher (2013) recorded 3.97. It was not surprised to find that students in this study showed positive intention towards entrepreneurship because they were from a university with "entrepreneurial university" status. The climate in the university had helped to develop such intention within the students. Furthermore, the entrepreneurship related courses that the students had attended during their studies had also helped them to be positive in becoming entrepreneurs.

In terms of the factors influencing entrepreneurial intention, the analyses indicated that proactiveness and innovativeness were playing a vital role. The results were rather congruent with Bolton and Lane (2012). Proactiveness is an important quality required by entrepreneurs to actively look for business opportunities. Students who have attended the entrepreneurship related courses would be able to develop abilities in

Table 6 Multiple Regression Analysis

Model	Beta	t	Sig.	Tolerance	VIF
Pro	0.631	4.824	0.000	0.49	2.04
Inno	0.585	4.245	0.000	0.44	2.29
Risk	0.047	0.442	0.660	0.66	1.52
R^2	0.457				
Adjusted R^2	0.426				
F-statistic	14.859 (sig. < 0.001)				

seeking and securing valuable business opportunity. Thus, when an individual is able to identify and utilize a business opportunity, the person is deemed to have higher potential to be an entrepreneur. Meanwhile, innovativeness is related to engaging new ideas to produce new products, services or processes. It is important for current entrepreneurs to be innovative because of the increasing competitive business landscape. Today's university students have ample opportunity to innovate. For instance, various competitions and exhibitions held at the national and international levels allow them to share their innovative ideas or products. Therefore, it was not surprised to find that students showed innovative quality and demonstrated positive intention towards entrepreneurship.

However, this study found that risk-taking was not a significant factor that affected entrepreneurial intention. The finding supported Robinson and Stubberud (2014) and Ekpe and Mat (2012) but was dissimilar to Yurtkoru et al. (2014), Bolton and Lane (2012) and Kropp et al. (2008). Entrepreneurship is a process which requires the entrepreneurs to assume risk. Thus, low risk-taking ability would definitely hinder the individuals from taking up entrepreneurial activities. Furthermore, students were lacking of the necessary resources in becoming entrepreneurs; thus, it was understandable that their risk-taking ability did not drive them towards entrepreneurship.

Conclusions

This study was performed to determine the university students' level of entrepreneurial intention and to identify the effects of IEO on entrepreneurial intention. The result indicated that university students demonstrated intention towards entrepreneurship and were quite positive towards becoming entrepreneurs. Furthermore, the findings also pointed out that university students' entrepreneurial intention was affected by their quality of proactiveness and innovativeness. Unfortunately, this study did not find any positive influence of risk-taking ability on entrepreneurial intention.

This paper has both theoretical and practical implications. Theoretically, it highlighted the importance of IEO. It also supported the views that EO can be studied and measured at the individual level. Practically, it shed lights on university students' IEO and their entrepreneurial intention. This paper suggested that university students still need to be polished in terms of their entrepreneurial knowledge, skills and competencies. As such, it gave the management of higher learning institutions some insights on entrepreneurship education curriculum development. Specifically, the entrepreneurship training should focus on enhancing students' EO ability and increasing their entrepreneurial intention. A competitive entrepreneurship course should blend the traditional and experiential learning approach together, which provides the learners an opportunity of "learning by doing" (Bell, 2015). Therefore, universities should consider offering entrepreneurship courses that focus on both the theoretical part and hands-on experience.

On top of that, entrepreneurship training should also focus on satisfying individual's needs. As Koe (2015) found, students from different fields of studies recorded different IEO ability; for instance, business students and non-business students possessed significant differences in risk-taking and innovativeness. This means that developing a common entrepreneurship education curriculum that caters to all students from various fields of studies is no longer a good practice. Universities should develop specific curriculum to fulfill the specific

demands of learners from various faculties. Besides the curriculum development, additional entrepreneurial activities could also help to enhance students' entrepreneurial ability. For examples, in order to enhance students' innovativeness, students should be encouraged to take part in invention and innovation competition. However, the main aim of participating in the competition is not to win the awards but to exchange ideas, gain new ideas and develop better ideas. As to improve students' proactiveness and risk-taking abilities, they should be encouraged to involve actively in real business, through the assistance of entrepreneur incubators or entrepreneur hubs.

This study consisted of several limitations. For instance, it employed a three-dimension IEO model. Future studies are suggested to expand the IEO model into a five-dimension model. Furthermore, the sample was selected from a public university. Future researchers are recommended to include students from private universities. Also, the sample can be expanded to include working adults or employees from business firms.

Acknowledgement
The author would like to express his deepest gratitude to the management of Universiti Teknologi MARA (UiTM), Melaka City Campus for providing the support and encouragement, students who have participated as respondents in the study and all his friends and colleagues who have offered their helping hands in various occasions.

Competing interest
The authors declare that they have no competing interests.

Received: 3 March 2016 Accepted: 24 October 2016
Published online: 29 October 2016

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