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Confirming Entrepreneurial Orientation Dimensions and Linking It With Entrepreneurial Intention Among Business Students in Indonesia

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ABSTRACT

Purpose – The objective of this study is to confirm the dimensionality of Entrepreneurial Orientation (EO) based on an exploration of its factors among Indonesian business students. It also aimed to examine the relationship between EO and student inclination toward entrepreneurship.

Design/methodology/approach – A cross-sectional survey was conducted targeting students at Indonesian universities. Using a pilot sample of 65 students, the authors developed their hypotheses. Thereafter, based on a sample of 381 students, the hypotheses were tested using structural equation modeling.

Findings – The findings revealed that EO in the Indonesian context was a three- factor instrument consisting of the three dimensions: risk-taking, innovativeness and proactiveness. Moreover, the findings showed there is a positive relationship between EO and Entrepreneurial Intention (EI) among business students at Indonesian universities.

Practical implications – Given the imperative need for universities to monitor and improve the entrepreneurial spirit among business students, this study can help business students to understand better regarding the business attitude they need to maintain, which can help them to improve proactive personality and formulate effective business strategies in the future.

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Originality/value – This paper came to be one of the first studies that attempted to assess the EO among business student in Indonesia using AMOS-SEM. Additionally, this study pioneered through drawing a factorial picture for EO in the Indonesian context.

JEL Classification : M110, M130

Keywords: Entrepreneurial intention, Entrepreneurial orientation, Structural equation modeling, Business studentsr

INTRODUCTION

Linking education and entrepreneurship with academic institutions clearly point out that universities have become strategic places to nurture entrepreneurial spirit among students (Nastiti *et al*., 2010). Since the essential aspect that needs to be embedded in every new start-up is the entrepreneurial intention (De Clercq *et al*., 2012), universities have a crucial role in enhancing entrepreneurial education in order to encourage the students to become self-employed once they graduated from university.

Gorman *et al* (1997) claimed that students' inclination towards entrepreneurship is an important source of the establishment of a new business. The attitude, behavior, and entrepreneurial knowledge owned by students can stimulate intention and desire to initiate new business ventures in the future (Nastiti *et al*., 2010). The educated students at the college level are expected to be successful entrepreneur initiators (Nastiti *et al*., 2010). Hence, entrepreneurial intention among students is a vital issue that needs to be further explored in an effort to understand the procedure for establishing new businesses. However, the number of entrepreneurs in Indonesia between 2011 and 2015 was in the range of 0.43% and 1.65% which is below the required minimum of 2% of the total population (Antara, 2015b; McClelland, as cited in Arcom, 2013; Hatta, 2012; Kurnianto & Putra, 2012; Musa & Semasinghe, 2013). This percentage is the lowest compared to other ASEAN countries, such as Malaysia, Singapore, Thailand and Vietnam. As of 2015, there are 7.24 million open unemployment across Indonesia (Antara, 2015a).

According to the previous research conducted by Ridwan (2013), there is no clear intention of the students' business activities, they just do the business as hobbies without considering what the market actually needs. It is due to the fact that Indonesian people have low entrepreneurial awareness and most of the universities in Indonesia only focus on academia and few have plunged into the world of practitioners and entrepreneurship (Kuswara, 2012). They lack entrepreneurship awareness and most of them still do not realize that it is challenging to find jobs nowadays (Kuswara, 2012). Among 2,679 private universities and 82 state universities in Indonesia, only a few universities are concerned with the importance of entrepreneurship on campus (Kuswara, 2012). Moreover, out of the 4.8 million university students Indonesia, only 17.4% have the right entrepreneurial spirit and orientation to venture into entrepreneurship after completing their studies (Amrullah, 2012). Meanwhile, more than 83% of university graduates in 2012 preferred to become employees in any of the leading companies or government

institutions (Amrullah, 2012; Subachtiar, 2013; Sutarto, 2012; Temonsoejadi.com, 2013). They tend to choose a secure career path that can pay a monthly income rather than face the challenges of being involved in high-risk entrepreneurial activities. Interestingly, the industries are only able to accommodate up to 10-15% of the university graduates each year (Yusuf, 2012). As a result, the rate of the educated unemployed increases every year (Yusuf, 2012). Moreover, studies have found that the presence of significant social risk experienced by an individual in setting up a business is an anxiety of being degraded and derided when the risk of failure is imminent and this will lead to negative opinions of their inability (Phikala & Vesatlenein, as cited in Astuti, 2009). In addition, most students who are financially well-off, tend to spend their money consumptively, rather than use their money for risky activities, like entrepreneurial activities (Sulistyorini, 2013). These situations are related to the fact that business competition is getting tighter, so innovativeness, risk-taking and proactiveness are required. Therefore, these three variables are necessary to be used as the dimensions in this study.

Based on the discussion above, EO and EI attitude should be owned by an entrepreneur, whether it is a student or otherwise. Considering the Indonesian scenario, such varied features of EO among the Indonesian students have yet to be extensively researched.

LITERATURE REVIEW

Entrepreneurial Orientation

Many previous studies have come up with various opinions regarding entrepreneurial orientation (Bolton & Lane, 2012; Lumpkin & Dess, 2001, 1996; Lumpkin, Cogliser, & Schneider, 2009; Miller, 1983; Taatila & Down, 2012). However, the definition of entrepreneurial orientation is open to debate as it could vary which means that there is no fixed definition of the 'entrepreneurial orientation' term (Covin & Wales, 2012).

Entrepreneurial orientation is defined as a tendency to explore new business opportunities (Bolton & Lane, 2012). The expression of this inclination has led to the creation of attributes, such as innovativeness, risk-taking and pro-activeness of an individual. Miller (1983) divided the entrepreneurial orientation into three dimensions: innovativeness, risk-taking and proactiveness. According to Miller (1983), innovativeness is defined as the propensity to be involved in creative activities and experimenting new things in business, such as introducing new products and technological leadership in new processes through R&D. Risk-taking includes the ability to take calculated yet bold actions, such as venturing into new areas of business, experimenting with new sources of finances and/or making significant resource commitments to new ventures in the wake of uncertain environmental conditions (Simamora *et al*., 2016). Proactiveness involves forward-looking and opportunity-seeking behavior ahead of the current competitive environment, such as the introduction of new products and processes in anticipation of demand in future.

As stated by Bolton and Lane (2012) most of the research in the area of entrepreneurial orientation has utilized three of these variables, i.e., innovativeness, proactiveness and risk-taking, while autonomy and competitive aggressiveness have been studied less often.

Researchers have discovered that the EO construct in general incorporating these all the five elements can be studied jointly (Lumpkin *et al*., 2009; Runyan *et al*., 2008) or individually (Lumpkin & Dess, 2001; Wang, 2008), depending on the context.

Apart from that, the aspect of networking also plays a substantial role to improve the entrepreneurial orientation of individuals (Taatila & Down, 2012). Individuals will find it difficult to start-up a business if they do not socialize with their community, especially in the business environment. Thus, Jenssen and Greve (2002) argued that it is a fact that a business organization provides networking with members based on the business climate instead of a singular entity.

In the context of a business community, people need to develop a relationship and networking with other people to optimize their capacity, especially in conducting business. The networking can also be defined as a gateway that adds to the ability and resources of an individual (Davis, 1969; Hautama¨ki, 2003; McAdam & McClelland, 2002; Myint, Vyakarnam & New, 2005); in turn, active networkers can benefit from the enterprise's network. Although a high level of interaction can be established through networking, it is crucial to sustaining a platform of processes for interactive and sensible social networking in order to significantly achieve benefits of the existing resources from networking (Swan *et al*., 1999).

Entrepreneurial Intention

The term 'entrepreneurial intention' can be conceptualized as the initial step in the process of establishing a business that is generally long-term (Lee & Wong, 2004). Krueger (1993) said that entrepreneurial intention refers to one's commitment to start a new business and is a central issue that needs to be considered to understand the process of establishing a new business. Gurbuz and Aykol (2008) defined entrepreneurial intention as one's desire to engage in entrepreneurial activities, or in other words, to be self-employed. The entrepreneurial intention has recently started to receive attention because it is believed that a behavioral intention is a reflection of the actual behavior. This statement is also supported by the research of Piperopoulos & Dimov (2015).

Mustikawati and Bachtiar (2008) defined intention as the intrinsic force that is able to inspire and motivate the individual to pay attention. It can also be defined as she/he is consciously interested in something outside himself with pleasure feeling. There are several ways by which one can recognize interest based on intention classification according to Super and Crities (as cited in Mustikawati & Bachtiar, 2008), such as asking about the most favoured activities and least favoured activities (expressed interest); observe a hobby or other activity that is mostly done by the subjects (manifest interest); and asking the subject, whether or not he or she is happy in the number of activities or something (inventoried interest).

Entrepreneurial intention can also be interpreted as the procedure for finding information that can be used to achieve the purpose of establishing a business (Katz & Gartner, 1988). An individual with the propensity start a business will have the willingness compared to one who does not have the desire to commence a new venture.

Accordingly, based on the definitions of entrepreneurial intention above, it can be inferred that having an interest in entrepreneurship is a critical determinant in the formation of an

individual's tendency to initiate and run a business. If a person does not have an interest in entrepreneurship, then everything that will be done related to the entrepreneurship process will be more severe than the one who has an interest in entrepreneurship (Segal *et al*., 2005; Shane *et al*., 2003).

Entrepreneurial Orientation Instrument and Pilot Study

The EO measurement was initially developed by Lumpkin and Dess (1996). However, it cannot be examined directly in student population because the questionnaire focuses on firm performance (Bolton & Lane, 2012; Taatila & Down, 2012). In order to measure the students' EO, the questions had to be adjusted so that the questions can be used to measure entrepreneurial intention at the individual level.

Accordingly, the instrument of EO was modified by Bolton and Lane (2012); as well as Taatila and Down (2012) to assess EO for the individual. Keeping in mind that although entrepreneurship refers to a wider concept than the actions of single entrepreneurs, the formation of firm-level EO is based on the behavior of entrepreneurial individuals (Lumpkin & Dess, 1996; Miller, 1983).

The dimensions of innovativeness, risk-taking and proactiveness were initially developed by Miller (1983) and had been mostly used by the researchers, while autonomy and competitive aggressiveness developed by Lumpkin and Des (1966) have been studied less often (Bolton & Lane, 2012). In addition, another dimension of networking has been used by Taatila and Down (2012) to measure the EO among students.

Preliminarily, the validated measures provided by Lumpkin *et al*. (2009) were altered by Bolton and Lane (2012) from 'my firm' and 'managers of my firm' to 'I' and the 'business opportunities' to 'opportunities' and so on. Any question on 'business goals' were turned into 'project goals' or 'team goals' and the term, 'business objectives' were changed to 'project achievement objectives'.

To explore EO dimensionality in the Indonesian context and to make sure students' notion as well as the consistency of the instrument items, this study has conducted a pilot study. First of all, an expert translator translated the questionnaire from English into Indonesian. Then the resulting translation was, blindly, back-translated from Indonesian to English by another translator. After that, the authors matched the translated copies to reach the most accurate translation and eliminate statements that gave different meanings, e.g. Brislin (1980); Mahmoud & D Reisel (2014); Mahmoud (2013). The new copy was then reviewed by Professor from the Economics and Business Faculty, Indonesia University to guarantee face validity (Tharenou, Donohue, & Cooper, 2007). Thereafter, 80 questionnaires were conveniently hand-distributed to students in Indonesia from both public and private universities, resulting in 65 valid responses. EO items were then coded as 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree and entered into SPSS for analysis.

Since the researchers were still uncertain about the dimensionality of EO pertaining to Indonesian context, this study followed rigorous steps to test the dimensionality and the goodness of the measure. To test the goodness of the measure, exploratory factor analysis (EFA) and Confirmatory Factor Analysis (CFA) were carried out.

Having examined the data through EFA, this study revealed that only three dimensions are underlying the EO construct with Eigenvalue and factor loadings greater than 1 and 0.5, respectively (Creswell, 2012). However, due to the low factor loading (<0.5), INOV3, NETW1 and NETW2 were omitted during the analysis. Therefore, 9 items out of 12 items still remained. Further to verify reliability, Cronbach's α test was executed. Each of the three factors returned a Cronbach α score that satisfied the minimum 0.7 suggested by Tharenou *et al*. (2007) (see Table I). Therefore, our exploration showed that EO would likely factorize into a three dimension-structure if was tested using a confirmatory factor analysis (CFA) approach. Based on the above, we hypothesized the following, concerning the Indonesian context:

H1. EO has three dimensions that consist of risk-taking, innovativeness and proactiveness.

The 9 items of EO are displayed in Table 1 below:

Table 1. Pilot Study Summary: Exploratory Factor Analysis and scale reliability

CODE	Factor		
	1	2	3
Dimension 1: Proactiveness			
PRO3	0.928		
PRO2	0.744		
PRO1	0.701		
Dimension 1: Innovativeness			
INOV2		0.841	
INOV4		0.836	
INOV1		0.660	
Dimension 1: Risk-taking			
RT2			0.870
RT1			0.795
RT3			0.611
Eigenvalue	3.047	2.226	1.516
VE %	28.986	21.246	13.612
Reliability	0.819	0.806	0.808
KMO	0.710		
Overall VE%	63.844		
Chi-square	23.72		
Significance	0.001		

Entrepreneurial Intention Instrument and pilot study

All the entrepreneurial intention questionnaires were adopted without alteration from the study conducted by Linan and Chen (2006, 2009). The questionnaire has been used by Linan (2008); Guerro *et al*. (2009); Chen *et al*. (1998); and Zhao *et al*. (2005).

The construct of entrepreneurial intention was measured using a five-point Likert scale (1=strongly disagree to 5=strongly agree). The use of five-point Likert scale was also found in

previous entrepreneurial intent studies done by Gupta *et al*. (2009); Schwarzet *et al*. (2009); and Malebana and Swanepoel (2011).

To test both validity and consistency of the EI instrument in Indonesian context, this instrument was subjected to pilot testing. The pilot test was conducted in both private and public universities. In order to support the validity, this study follows the same process like EO in terms of translation and the expert review process. Thereafter, the 80 questionnaires were also conveniently hand-distributed to students in Indonesia from both public and private universities, resulting in 65 valid responses. EO items were then coded as 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree and entered into SPSS for analysis.

The result revealed that the Cronbach's alpha of EI items was 0.864, which met Nunnally and Bernstein's (1994) standard for scale development studies of 0.7. Hence, this instrument could be considered for the data collection and analysis to explain the students' intention to deal with entrepreneurship. The nine items of entrepreneurial intention are described in Table 2 below:

Table 2. Entrepreneurial Intention Construct

Coding	Items
EI1	I am ready to do anything to be an entrepreneur.
EI2	My professional goal is to be an entrepreneur.
EI3	I will make every effort to start and run my own business.
EI4	I am determined to create a business venture in the future.
EI5	I do not have doubts about ever starting my own business in the future.
EI6	I have very seriously thought of starting a business in the future.
EI7	I have a strong intention to start a business in the future.
EI8	My qualification has contributed positively towards my interest in starting a business
EI9	I had a strong intention to start my own business before I started with my qualification

Linking Entrepreneurial Orientation and Entrepreneurial Intention

There are debates on the findings when entrepreneurial orientation is linked to entrepreneurial intention (Bolton & Lane, 2012; Croson & Gneezy, 2009; Janssen & Yperen, 2004; Jianakoplos & Bernasek, 1998; Williams & Narendran, 1999; Zampetakis *et al*., 2009). Researchers have found a strong relationship between entrepreneurial intention and innovativeness and risk-taking propensity as the most popular attributes influencing entrepreneurial aspirations of people (Begley & Boyd, 1987; Lee & Tsang, 2001). Kumar (2012) pointed out that the young entrepreneurs with better entrepreneurial orientation will have better productivity and performance in business operations.

Bolton and Lane (2012); Janssen and Van (2004); and Yperen and Seibert *et al*. (2001) proposed that the entrepreneurial orientation of students is significantly related to entrepreneurial intention. According to entrepreneurship experts, the most important aspect of entrepreneurial learning method is to embed the entrepreneurial orientation because this attitude can drive a person to have an intention for entrepreneurship and finally engage in an entrepreneurial activity (Sulistyorini, 2013).

Interest in entrepreneurship is equivalent to interest of a person to be involved and be willing to engage in entrepreneurship activities. These activities include taking risks to run a business, making use of business opportunities that exist to create new businesses with innovative approaches or to improve the number of venture creations (Mansyur, 2013). Zampetakis *et al*. (2009) argued that innovation ability does not predict entrepreneurial intent if the ability is not supported by a proactiveness attitude to deal with entrepreneurship. Meanwhile, Hamdan (2013) argued that the desire to be entrepreneurs, the courage to take risks and the ability to become an entrepreneur influence the entrepreneurial intention. The individuals with a tolerance of high risk are generally more motivated to be involved in entrepreneurship compared to the ones with a lower propensity to take risks and therefore, much less motivated to engage in entrepreneurial activities (Remeikiene *et al*., 2013).

Krabel (2013) stated that the likelihood of graduates becoming self-employed is significantly associated with the entrepreneurial orientation of the university. Hassan (2001) examined empirically the relationship between entrepreneurial proactiveness and entrepreneurial intention in the Malaysian context by using a sample of 421 business students at Malaysian Universities. His study indicated that an entrepreneur's proactive personality traits have a significant influence on entrepreneurial intention among Malaysian business students.

According to Bateman and Cram (as cited in Hassan, 2001), the scale of proactive personality may have implications for employment choice and entrepreneurship, in particular. They further suggested that the proactive personality scale may have implications for the vocational choice and entrepreneurship. Although past researchers have hinted at the link between entrepreneurship and proactivity, only Crant's 1996 (as cited in Hassan, 2001) study empirically demonstrates that a proactive attitude is associated with entrepreneurial intention.

It is clear from the above discussion that risk taking, proactiveness and innovative ability of people are directly connected to their intention to become entrepreneurs. Hence, this study proposes the second hypothesis of the research, which is mentioned below:

H2. There will be a positive relationship between EO and EI among business students in Indonesia.

RESEARCH METHODOLOGY

In order to gather the data, this study utilized self-administered questionnaires and analyzed the data using AMOS-SEM and SPSS. We conducted a cross-sectional survey targeting a sample of business students at the Indonesian higher education institutions both public and private. The items of both EO and EI instruments were assessed on a five-point Likert scale. Using a convenience sampling method, we distributed 1,230 self-administrated questionnaires to the business students at public and private universities in Indonesia.

This data collection process yielded back with 381 usable responses that were used in the statistical analysis for assessing EO and EI factorial validity using the CFA method. Given the rationale for adopting the CFA method, factor validity is usually assessed using either the exploratory or the confirmatory models. EFA is adopted when the researcher is uncertain about the dimensionality of a measure, so he or she seeks for identifying the minimal number of factors that observed variables are linked to. Alternatively, CFA is followed under the circumstances

where the researcher has some knowledge of the measure structure, so he or she will postulate the linkages between observed measures and the underlying latent variables a priori then test this hypothesized model statistically (Byrne, 2010).

The relationship between Entrepreneurial Orientation and Entrepreneurial Intention is very interesting to be studied because there are debates on the findings when entrepreneurial orientation is linked to entrepreneurial intention (Bolton & Lane, 2012; Croson & Gneezy, 2009; Janssen & Yperen, 2004; Jianakoplos & Bernasek, 1998; Williams & Narendran, 1999; Zampetakis *et al*., 2009). In addition, researchers have found a strong relationship between entrepreneurial intention and innovativeness and risk-taking propensity as the most popular attributes influencing entrepreneurial aspirations of people (Begley & Boyd, 1987; Lee & Tsang, 2001).

Having examined the factorial validity, this study examined the relationship between EO and EI among business students in Indonesia by using AMOS-SEM.

RESULT AND DISCUSSION

Results Demographic data description Exhibited in Table 1, our demographic data shows that our respondents consist of (55.38 percent) males and (44.61 percent) females. The majority of the respondents attends private universities (61.64 percent) while (38.36 percent) of our sample are students at public universities. Additionally, most of our subjects (55.21 percent) are aged 22 years or above.

Prior to conducting the hypothesis testing, this study attempted to analyze the difference of entrepreneurial intention between male and female students in Indonesia. In order to perform this analysis, independent sample T-test was employed and the result reveals that the entrepreneurial intention between both groups is different. Tables 3 and 4 below describe the comparison of entrepreneurial intention between male and female students as follows:

Table 3. Gender Distribution

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
EIav	Male	211	3.8544	0.64374	0.04432
	Female	170	3.7175	0.62214	0.04772

Table 4. Independent Sample T-test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EI-av	Equal variances assumed	1.448	.230	2.093	379	.037	.13683	.06536	.00831	.26535
	Equal variances not assumed			2.101	366.716	.036	.13683	.06512	.00877	.26489

As depicted in Table 3 above, the mean value of male students is slightly higher than female students. However, Table 4 depicts that there is a difference in both male and female students in terms of their intention to engage in an entrepreneurial career. In order to interpret the output, the first row in Table 4 is used since the significance value in Levene's Test is more than 0.05. It is clearly seen that the significance (2-tailed) is .037, showing that there is a difference between the two groups.

Hypothesis Testing

Prior to running any CFA and analyzing the hypotheses, this study is subjected to normality test of the observed variables. Several scholars have recommended having this procedure conducted before running CFA (Bentler, 2005; Gao, Mokhtarian, & Johnston, 2008; Kumar Sharma, Al-Shihi, & Madhumohan Govindaluri, 2013; Mardia, 1970).

Normality Testing

The statistical methods used to assess the normality distributions of the variables are skewness and kurtosis as well as Kolmogorov-Smirnov and Shapiro-Wilk test. Skewness is the measure of the symmetry of a distribution and kurtosis is the measure of the peakedness or flatness of distribution (Tabachnick & Fidell, 2001). Distribution is assumed to be normal when the skewness and kurtosis measures are as close to zero as possible. However, there are no formal cut-off points on the levels of skewness and kurtosis to indicate when variables are no longer regarded as normal (Curran *et al*., 1996). A small departure from zero is therefore a non-issue, as long as the measures are not too large compared to their standard errors. Consequently, the measures should be divided by its standard error in order to obtain the z-value of the skewness and kurtosis. The skewness and kurtosis z-values should be in the range of -1.96 to +1.96 when the variables are normally distributed (Cramer & Howitt, 2004; Cramer, 1998; Doanne & Seward, 2011). The result reveals that the data are approximately normally distributed for all variables with the z-values within +/- 1.96 (Cramer & Howitt, 2004; Cramer, 1998; Doanne & Seward, 2011).

Table 5. Test of Normality for EO

Entrepreneurial Orientation			Statistic	Std. Error
EOav	Mean		3.9098	0.03429
	95% Confidence Interval for Mean	Lower Bound	3.8424	
		Upper Bound	3.9773	
	5% Trimmed Mean		3.9427	
	Median		4	
	Variance		0.448	
	Std. Deviation		0.6694	
	Minimum		1.33	
	Maximum		5	
	Range		3.67	
	Interquartile Range		0.66	
	Skewness		0.219	0.125
	Kurtosis		0.433	0.249

Table 6. Test of Normality for Entrepreneurial Intention

Entrepreneurial Intention			Statistic	Std. Error
EIav	Mean		3.7933	0.03264
	95% Confidence Interval for Mean	Lower Bound	3.7291	
		Upper Bound	3.8575	
	5% Trimmed Mean		3.8055	
	Median		3.67	
	Variance		0.406	
	Std. Deviation		0.63701	
	Minimum		1.83	
	Maximum		5	
	Range		3.17	
	Interquartile Range		1	
	Skewness		0.015	0.125
	Kurtosis		-0.12	0.249

Another statistical method used to confirm the normality assumption is the Kolmogorov-Smirnov and Shapiro-Wilk test. The results depicted in Tables 6 revealed that the p-value in each variable is above 0.05; therefore, the null hypothesis is not rejected. In terms of the Shapiro-Wilk test, it can be assumed that the data distribution of each variable is not different and thus, is approximately normally distributed (Razali & Wah, 2011; Shapiro & Wilk, 1965).

Table 7. Test of Normality for Independent and Dependent Variables

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
EOav	.052	381	.132	.870	381	.082
EIav	.131	381	.187	.755	381	.154

a. Lilliefors Significance Correction

Based on the above discussion, this study confirms that the data are normally distributed and therefore the CFA can be run.

Using the approach of structural equation modeling adopting Amos v18, first, as represented by Figure 1, we test the measurement model with its four original factors (i.e. Innovativeness, risk-taking, proactiveness and networking). The resulting fit indices demonstrate the proposed model with a poor fit to our data (see Table 8) eg., the comparative fit index (CFI) is less than 0.9 (0.840) (Bentler, 1990) and the root mean square error of approximation (RMSEA) is more than 0.080 (0.086) (Browne & Cudeck, 1993).

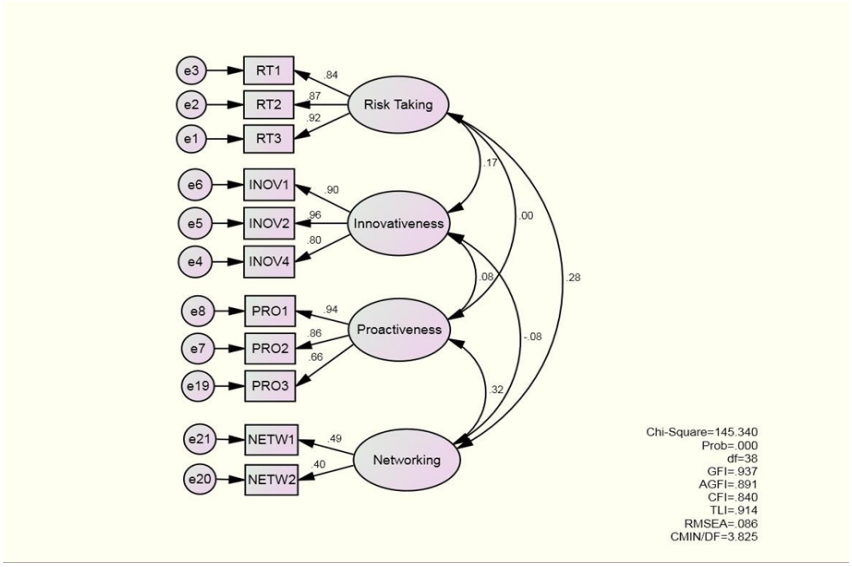

Figure 1. Basic Measurement Model of EO Dimensions (prior to hypothesis testing)

Table 8. Proposed Measurement Model Assessment and Modifications

Model	Chi Square	Relative Chi Square	CFI	TLI	RMSEA
Proposed Model	7235.33	2.94	0.840	0.914	0.086
Recommended Value*	N/A	< 3.0	≥ 0.9	≥ 0.9	< 0.08

Second, this study tested H1, which is represented by the generated measurement model (see Figure 2). The CFA was performed to confirm the dimensionality of the measurement model or further requiring for an EFA, if the proposed hypothesis is not unsupported (Byrne, 2010). This study uses the following statistics for testing the goodness of fit: TLI (Bentler & Bonett, 1980), CFI (Bentler, 1990), root mean square residual (RMR) (Hu & Bentler, 1995), and RMSEA (Browne & Cudeck, 1993). Those statistics will help test how good the measurement model fits the collected data. Looking at Table 9, we notice that the CFI is higher than 0.9 (CFI=0.976>0.9), the TLI is is higher than 0.9 (CFI=0.947>0.9), and the RMSEA is less than 0.08 (RMSEA=0.073<0.08) (Bentler, 1990; Byrne, 2010; Hu & Bentler, 1995; Jöreskog & Sörbom, 1989; Kumar Sharma *et al*., 2013; Scherer, Adams, Carley, & Wiebe, 1989). This figure also represents the output path diagram for our generated measurement model.

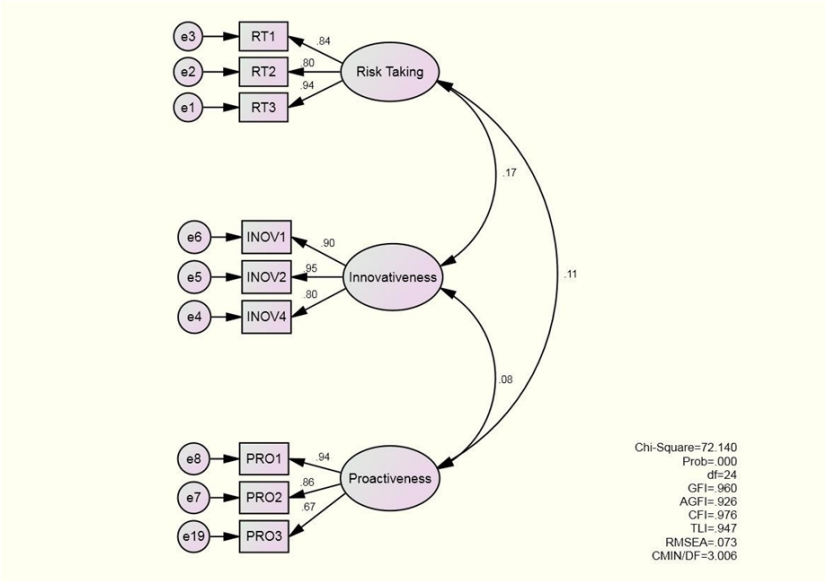

Figure 2. Generated Measurement Model of EO Dimensions (hypothesis testing)

Consequently, this study concludes that the measurement model above expresses a good fitting for our data. In addition, this study arrives at a decision that three dimensions of EO model is fully supported, consisting of innovativeness, risk-taking, and proactiveness. Table 9 below summarized the overall goodness of fit indices of the CFA measurement model of EO dimensions.

Table 9. Summary of Measurement Model of EO Dimensions

Model	Chi Square	Relative Chi Square	CFI	TLI	RMSEA
Proposed Model	135.340	2.94	0.840	0.914	0.086
The final Model	72.140	1.54	0.976	0.947	0.073
Recommended Value*	N/A	< 3.0	≥ 0.9	≥ 0.9	< 0.08

In addition, Table 10 below depicts the results of Cronbach's α test whose values are above 0.7 and thereby satisfying the criterion for showing good internal consistency of our scales (Tharenou *et al*., 2007).

Table 10. Reliability of EO dimensions

Factor	Number of items	α
Risk-taking	3	0.815
Innovativeness	3	0.915
Proactiveness	3	0.860

Prior to testing the hypothesis 2, this study runs again the CFA for the three dimensions of EO and a single dimension of EI. Due to low factor loading, the items of EI1, EI4 and EI9 were dropped from the model; resulting only 6 items of EI still remained. Figure 3 below shows the final output of the measurement model.

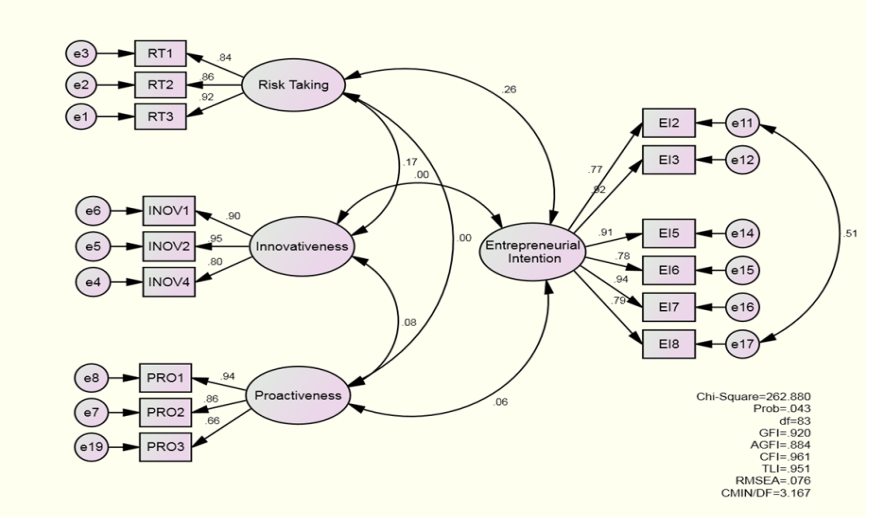

Figure 3. Generated Measurement Model of EO and EI (hypothesis testing)

- Convergent Validity

As presented in Table 11, the loading of all the items exceed the recommended level. Thus, the high loading of the items on their respective factors indicate the power of these items in explaining the variance in EO construct. Table 11 reports the Cronbach's alpha coefficients for EO dimensions under this study. The Cronbach's alpha coefficients for EO dimensions is 0.801, indicating an acceptable level of internal consistency among the items of each construct (Hair *et al*., 2010).

Table 11 Reliability and Convergent Validity of the constructs

Construct	Items in Average	Internal Reliability Cronbach's Alpha	Convergent Validity		
			Loading	Composite Reliability	Average Variance Extracted
Entrepreneurial Orientation	RTav		0.892		
	INOVav		0.719		
	PROav	0.801	0.673	0.908	0.586
Entrepreneurial Intention	EIav	0.891	0.798	0.948	0.755

RT : Risk Taking
INOV : Innovativeness
PRO : Proactiveness

Based on Table 11 above, the results show high factor loadings, indicating that the convergent validity of the measures is established.

- Discriminant Validity

Discriminant validity is the third aspect of assessing construct validity. It refers to the degree to which a set of items estimate only one construct and how this construct is distinctly estimated. In other words, high discriminant validity indicates that a construct is unique in measuring a phenomenon in such a way that cannot be captured by other constructs (Hair *et al*., 2010). Moreover, discriminant validity, in addition to ensuring distinctiveness, indicates that there are no cross loading issues related to the measured items. Following the suggestion of Venkatraman (1989), this study examined the discriminant validity by running the CFA on each pair of the constructs of the study. In the following sub-sections, further discussion is provided to establish the discriminant validity of EO and EI factors in the model.

All the constructs were examined to exhibit their construct discriminant validity, i.e., to verify that there are separate factors, the chi-square differences test was employed. In order to achieve this objective, a series of chi-square values were generated for the constraint model by constraining the correlation parameter between a pair of constructs to one. In other words, the chi-square tests compared the constrained models assuming that the pair of constructs is identical with the unconstrained model in which the correlation among all pairs are not constrained.

Based on the tests, the discriminant validity between any pair of constructs is achieved if the chi-square difference (with one df) between the unconstrained and constrained models is significant. If the difference is significant, it can be concluded that the two constructs are correlated, yet distinct (Anderson & Gerbing, 1988). The results in Table 12 reveal that the chi-square differences was 20.83, and all these values are significant since they all exceed $\chi2(1)= 10.828$ at the 0.001 level of significance. Thus, discriminant validity among the constructs is supported.

Table 12 Discriminant Validity of the entire model

	Unconstrained Model $\chi2(1440)=2382.996$	
Construct Pair	Constrained Model $\chi2(1412)$	Chi-Square Difference $\Delta\chi2$
EO ↔ EI	2403.827	20.831

***: p< 0.001

Besides assessing the discriminant validity using chi-square difference test, this study also examined the discriminant validity using AVE. The result is shown in Table 13 below:

Table 13 Correlation in each constructs and Average Variance Extracted (AVE)

	EO	EI
EO	0.812	
EI	0.708	0.825

Based on Table 13 above, it is clear that EO construct has good discriminant validity. It is due to the fact that almost all the correlation values are lower than the AVE of each dimensions. Thus, it can be concluded that each of the dimensions is unique and able to capture the phenomenon that it intends to measure.

Aiming to test H2, this study tested each dimension of EO toward the single dimension of EI using AMOS-SEM v18. This study developed a generating model in an attempt to ensure a better fitting and possibly more parsimonious model. Hence, it showed that the generated structural model was achieved model fit with p-value of 0.143 (p-value > 0.05). In other words, these whole dimensions of EO positively influence EI among business students in Indonesia.

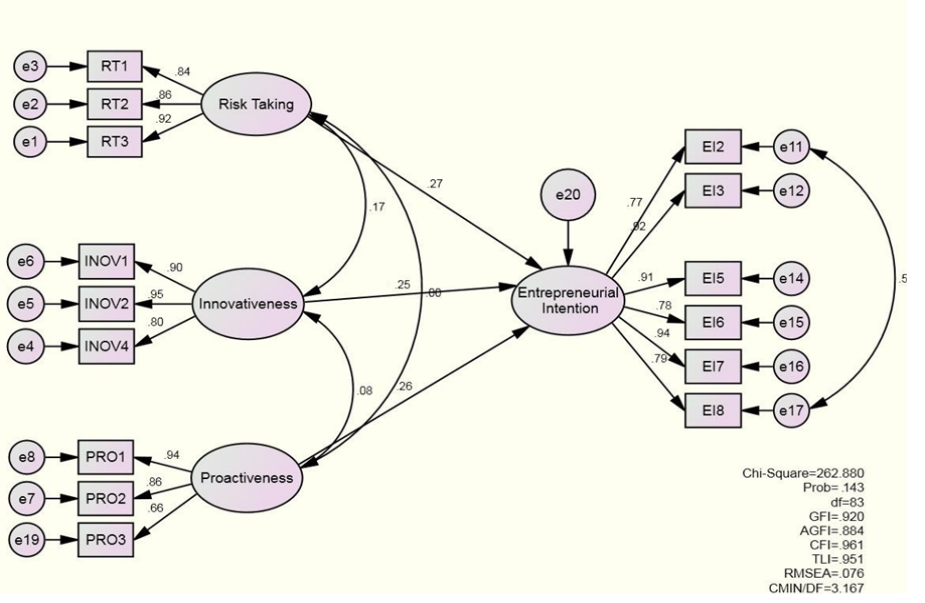

Figure 4. Generated Structural Model with Standardized Estimates

DISCUSSION AND IMPLICATION

This study has achieved its research objectives in exploring the determinants of entrepreneurial orientation and entrepreneurial intention among business students in Indonesian. This study also aims to examine the relationship between EO and EI by utilizing AMOS software ver18.

In this study, it was hypothesized that entrepreneurial orientation is positively related to entrepreneurial intention. The results indicated that entrepreneurial orientation was positively related to entrepreneurial intention among business students. Past studies support this relationship (Bolton & Lane, 2012; Janssen & Yperen, 2004; Krabel, 2013; Seibert *et al*., 2001; Sulistyorini, 2013) that the higher the entrepreneurial orientation, the higher the entrepreneurial intention of students to become entrepreneurs.

It is rightly pointed out by several researchers that the desire to be entrepreneurs depends on the ability to take risks and ability to be innovative and proactive towards business engagement (Hamdan, 2013; Remeikiene *et al*., 2013). According to Begley and Boyd (1987); and Lee

and Tsang (2001), several factors in relation to EO, like ability to take the risk, innovation and creativity and proactiveness of people are directly linked to EI.

In line with the above discussion, Hamdan (2013) asserted that the desire to be entrepreneurs, the courage to take risks and the ability to become an entrepreneur influence both partially and simultaneously the entrepreneurial intention. Risk-taking is the tendency of an individual to take risks (Reardon, as cited in (Remeikiene *et al*., 2013).

Under these circumstances, universities which facilitate entrepreneurial development programs emphasize the EI factor to develop student entrepreneurs. The ability to take risks is one of the important factors as well as entrepreneurial training and learning development opportunities. In order to support risk-taking ability, the students should be trained to be proactive and they should be bold enough to be creative and innovative to become young entrepreneurs in future. The result of the study indicates a strong correlation between students' EO and their intention to become entrepreneurs.

Whatever policy and regulation Indonesia is following now has been unable to increase the number of entrepreneurs in this country. So this kind of research may become an eye opener for the government and help them get a better insight relating to entrepreneurship in an effort to improve the innovation, proactivity and risk-taking ability and how these factors can build up the lack of entrepreneurial awareness among business students. This can ensure more entrepreneurs come from universities. Innovation is very closely related to business; once the number of entrepreneurs increases, it will increase the level of innovation. Innovation can improve the level of productivity and will definitely reduce the unemployment rate.

This study may become an eye opener for the government and help the government to get a better insight relating to entrepreneurship in an effort to improve the innovation, proactivity, risk-taking ability and how these factors can build up the lack of entrepreneurial awareness among business students, and thus, more entrepreneurs will be coming from universities. Innovation is very closely related to business; once the number of entrepreneurship increases, it will increase the level of innovation. Innovation will then improve the level of productivity and will definitely reduce the number of unemployed.

Therefore, the government should keep the innovation capacity high and facilitate young entrepreneurs to be more proactive and innovative since these factors have been proven to have a strong correlation with entrepreneurial intention.

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