

## Effectiveness of entrepreneurship quality education in higher educational institutions: A mediating effect of entrepreneurial training

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### CHRONICLE

#### Article history:

Received: October 14, 2020

Received in revised format:

November 11 2020

Accepted: November 14, 2020

Available online:

November 14, 2020

#### Keywords:

Entrepreneurship

Education

Entrepreneurial Goal Intentions

Entrepreneurial training

### ABSTRACT

The main aim of this study is to assess the effectiveness of entrepreneurship quality education in higher education institutions in Indonesia on entrepreneurial goal intentions with the mediating effect of entrepreneurial training. The research followed the quantitative research design as the researcher collected data based on numeric facts. The sample size was 314 participants and a test was carried out on Smart PLS. The results were based on the measurement model to test the factor loadings, validity and reliability, path assessment, and the blindfolding technique which were mainly used for assessing the predictive relevance of the model. The findings of the study suggest that entrepreneurial training mediates entrepreneurship quality education programs in higher education institutions in Indonesia with entrepreneurial goal intentions.

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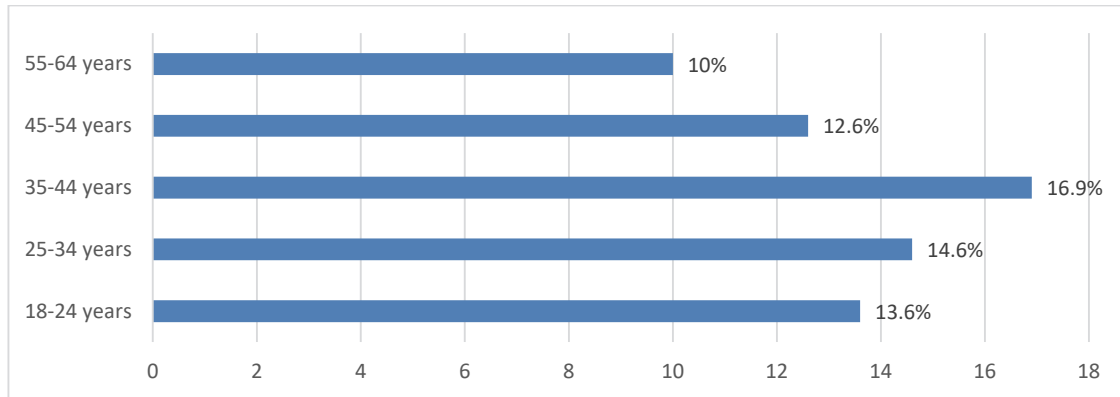
## 1. Introduction

In the current era of expeditious developments and advancement, entrepreneurship has become a powerful tool to enhance the economic position and labor market (Maritz & Brown, 2013; Ndofirepi, 2020). Byun et al. (2018) stated that in recent years, governments and business entities are convinced that entrepreneurship is central to economic development because it contributes to the creation of new employment opportunities and expands business sectors in the country. Small and medium enterprises are considered as major contributors to expand industries and fill the void market of employment opportunities (Lekoko, 2012; Henry et al., 2017). To ensure that good quality education relates to entrepreneurship, educational institutions must design effective programs for entrepreneurship as it is proved that there is a significant and positive impact of entrepreneurial education on the performance of women entrepreneurs (Raza et al, 2020). Thus, training and workshops are a key ingredient for the establishment of new business start-ups because it acts as the stepping stone for fresh graduates to establish their ventures (Ghina, 2014; Premand et al., 2016). In this regard, Fatoki and Oni (2014) advocated that the emergence of the fourth industrial revolution has increased the demand for different competencies such as innovation, agility, and creativity for new business start-ups that have made entrepreneurship training highly crucial and necessary. The active role of entrepreneurship in leveraging the economic situations in Indonesia has also inspired universities in the country to establish entrepreneurship training programs and courses to provide comprehensive knowledge about the practices, ideas, and challenges of entrepreneurship to students (Din et al., 2016). After graduating from higher education, students busy themselves in seeking for good

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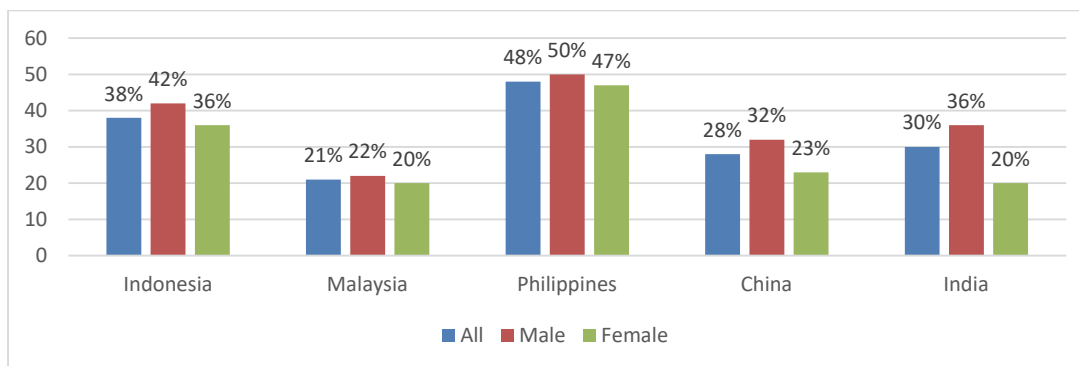
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employment opportunities that offer a promising future and a high pay scale; they tend to disregard the idea of establishing their business ventures (Rengiah, 2013; Scott et al., 2016). Therefore, there is a need to support their attitude toward establishing their entrepreneurial businesses, this could be achieved by adequate entrepreneurial education, this is confirmed that entrepreneurial education has a significant effect on attitude towards entrepreneurship (Alshebami et al., 2020). According to a survey conducted by Statista (2019), 12.6% of those belonging to the age group of between 45 to 54 years are in the process of establishing their business set-up, whereas only 13.6% graduates belonging to the age group of 18-24 years engage themselves in entrepreneurship activities in Indonesia. This can be observed from the graph below.



**Fig. 1.** Early-stage entrepreneur share in Indonesia 2018 Source: Statista, (2019)

According to Forbes (2012), the minister of Indonesia has advocated that the rapidly growing economy has led to income inequality due to the limited industries. People are clustered in a single domain, therefore, there is a crucial need for more entrepreneurs in Indonesia to expand the business sectors and create more employment opportunities. However, Hadi (2015) stated that in recent years, Indonesia has demonstrated significant progress in terms of economic development and entrepreneurship. According to a report by the World Bank (2019) entrepreneurship prevalence in Indonesia is much higher than other neighboring countries such as China and Malaysia. Furthermore, as per the report in Indonesia, both males and females are actively involved in entrepreneurship activities as demonstrated in the graph below.



**Fig. 2.** Entrepreneurship Prevalence Rates by Gender in different Asian Countries  
Source (World Bank, 2020)

From the graph above, it can be observed that overall entrepreneurship prevalence in Indonesia is at 38%, with a low gap between male and female entrepreneurs. Statista (2020) asserted that among its list of 137 countries, Indonesia is ranked at 94<sup>th</sup> position on the Global Entrepreneurship Index (GEI) and has a 21 GEI score. This indicates that in terms of entrepreneurship progress, Indonesia is still trailing behind the world's largest economies such as the US, UK, France, and the other Gulf States despite being the world's fourth most populous country and 10<sup>th</sup> largest economy (World Bank, 2020; GEI, 2020). In this regard, the study contemplated that entrepreneurship pieces of training at a higher educational level should be advocated and designed to be made mandatory for every student. Entrepreneurship training programs in higher education institutions should constitute numerous courses that can contribute to developing core competencies required for entrepreneurship in the market (Rauch & Hulsink, 2015). From the review of previous researches, it was inferred that there are quite a few studies that have studied the effect of entrepreneurship education programs over entrepreneurial goal intentions along with the mediating effect of education training in the context of Indonesia. Therefore, the underlying study will bridge the gap by studying the variable of education training in the Indonesian context. This particular study is highly significant for the management of educational institutions, government, and students of Indonesia in familiarizing them with how entrepreneurship education

programs affect the entrepreneurial goal and intentions along with the significance of education training in encouraging the student to pursue their entrepreneurial goals. The major aims and objectives of the underlying research are as follows:

- To assess the impact of entrepreneurship education programs over the entrepreneurial goal intentions.
- To study the mediating role of entrepreneurial training in influencing the relationship between entrepreneurship education programs and entrepreneurial goal intentions.
- To provide a set of recommendations for the government and educational institutions of Indonesia for future improvements.

## 2. Literature Review

According to the study carried out by Matlay et al. (2012), entrepreneurship education programs play a significant role in creating and developing the insights required to discover the hidden opportunities for entrepreneurs and develop the abilities and skills to transform an innovative idea into a successful business start-up. Similarly, Rae (2012) and Lekoko (2012) asserted that the demand for entrepreneurial education programs by business students has gained massive growth because they intend to develop the skills that can help them survive among highly diverse and complex business sectors. A study conducted by Gerba (2012) advocated that education training programs develop the need for achievement among students that keep them motivated to focus on different innovative activities and make them persistent towards their decision to be self-employed. The term “need for achievement” is referred to as the desire of the individual to strive for certain goals and achieve satisfactory results (Fuad and Bohari, 2011; Ghina, 2014). Entrepreneurship education programs develop the desire among students to consider that besides seeking different employment opportunities in the market, they can start up their business venture with the help of new innovative ideas and by developing the required competencies (Aramand, 2013). Colakoglu and Gozukara (2016) stated that individuals and students who have a high need for achievement tend to possess a strong desire and motivation to engage in innovative activities and achieve their desired goals. In this regard, the underpinning hypothesis was formulated:

*H<sub>1</sub>: There is a significant impact of entrepreneurship education programs on the need for achievement.*

An entrepreneurship education program develops the belief of an individual over their capabilities and helps them to identify their skills and competencies (Brandstatter, 2011). Entrepreneurship education programs are central to the development of self-confidence among people for their entrepreneurial ideas and to encourage them to withstand disappointments and failures (Schjoedt and Shaver, 2012; Ishak et al., 2015). This is also referred to as “locus of control”, which describes the extent to which certain people possess the belief that they control the environment and situation (Hsiao et al., 2016; Mehta and Gupta, 2014). The study conducted by Ndofirepi (2020) implied that people with a high locus of control believe that they can control the things and situations that keep them motivated towards entrepreneurial activities. Meanwhile, in the external locus of control, people assume that every situation and circumstance is beyond their control and is managed by destiny (Khan et al., 2014; Asante et al., 2019). The study conducted by Prakash et al. (2015) advocated that a high internal locus of control motivates an individual to keep trying for better results and turn the situation into one’s favor despite numerous disappointments and dejections. In this concern, the following hypothesis has been designed:

*H<sub>2</sub>: There is a significant impact of entrepreneurship education program on internal locus of control.*

It is evident through different researches that entrepreneurship education programs emphasize the development of imagination, creativity, agility, risk-taking behavior, reactivity, and business abilities (Zaman, 2013; Altinay et al., 2012). Yordanova et al. (2011) advocated that risk-taking behavior is an essential prospect of entrepreneurship that enables an individual to respond to uncertain situations and complexities. The research carried out by Josien (2012) and Asante et al. (2019) specified that risk-taking propensity is essential in entrepreneurship to motivate an individual to keep progressing further rather than be set back due to risks and uncertainties. Risk-taking propensity refers to the degree to which a particular entrepreneur is willing to bear chances that include the possibility of loss (Hassan and Wafa, 2012). Risk is the prevailing component that comes along with new business ventures and start-ups. There is always the risk of low sales, poor response from consumers, and poor market performance (Gartner and Liao, 2012; Kraiczy et al., 2015). However, entrepreneurship education programs help the student to understand the significance of risk propensity to obtain successful results. Similarly, the study conducted by Solesvik et al. (2013) implied that entrepreneurship education programs help the individual understand the extent to which they should take risks in business to develop their risk propensity behavior accordingly. Therefore, the following hypothesis was formulated to test the impact of entrepreneurship programs on risk-taking propensity.

*H<sub>3</sub>: There is a significant impact of entrepreneurship education programs on risk-taking propensity.*

The research conducted by Entrialgo and Iglesias (2016) specified that educational training plays a crucial role in developing practical skills and capabilities that help students compete and survive in a professional environment. Entrepreneurial education training can be considered as the bridge to influence the entrepreneurial intentions of the individual who has focused on the entrepreneurship program (Ekpe and Mat, 2012). Education training can assist an individual to transform their theoretical

concepts related to entrepreneurship into practical skills through training that motivates them to establish their business start-ups (Shamsuddin et al., 2017). Education training programs encourage the students to work on practical scenarios and situations that enhance their approach towards entrepreneurship and provide ideas about the industries suitable for starting up the new venture (Piperopoulos and Dimov, 2015). In educational institutions, different entrepreneurship-related pieces of training are provided such as start-up contests, seminars with leading entrepreneurs, and start-up camps where students are asked to practically start the new business within the university campus and employ different entrepreneurship practices (Sanchez, 2013). Entrepreneurship intentions are highly significant in keeping an individual motivated towards their goal and withstand disappointments and failures (Bae et al., 2014). In this regard, the following hypothesis was drafted:

*H<sub>4</sub>: Entrepreneurial education training mediates the relationship between entrepreneurship education program and entrepreneurial goals intentions.*

### 3. Theoretical Framework

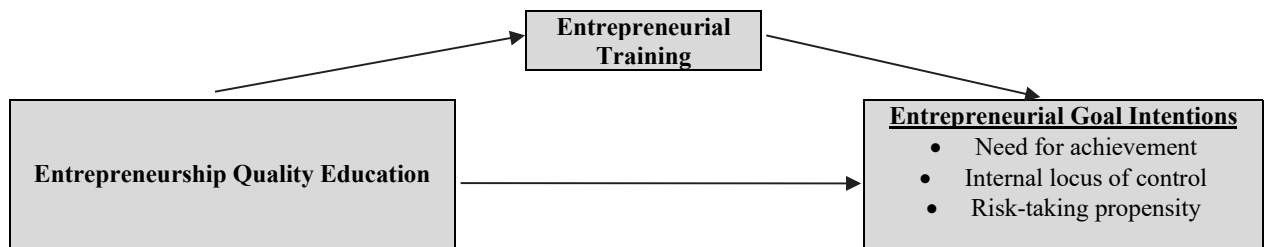
There are numerous theories related to entrepreneurship and educational training. However, the need for achievement theory by McClelland was the most suitable and applicable to explain the underpinning phenomenon.

#### 3.1 Need for achievement theory

The need for achievement theory was proposed by McClelland which specifies the need and desire for achievement within an individual that motivates them to achieve their goal regardless of failures and challenges (Weiner, 2011). McClelland believes that needs are learned and developed through situations and experiences. McClelland related the need for achievement theory with entrepreneurship whereby desire and strong willingness among entrepreneurs to achieve their goals keep them motivated in all circumstances and encourage them to face risks and failure without stepping backward (Chen et al., 2012). McClelland observed that individuals who have a high level of need for achievement tend to engage themselves in vigorous activities and set high standards for themselves to achieve the best results. The study conducted by Bipp and Van dam (2014) shows that the need for achievement is a crucial factor in entrepreneurship because people with a high need for achievement are not limited by the considerations of external incentives, failures, or money. McClelland further asserted that the limit and extent of the desire or need for achievement among people are influenced by the economic conditions of the country along with the decline of the country in question (Dweck, 2017). Poor economic conditions may distort the motivation level of entrepreneurs to start the new business venture due to the poor macro environment conditions which cannot bring them substantial returns on their investments (Singh, 2011).

#### 3.2 Conceptual Framework

The conceptual framework of the study is designed as follows.



Source: Prepared by the researchers

## 4. Research Methodology

### 4.1 Population and Data Collection Procedure

The present research aims to assess the effectiveness of entrepreneurship education programs in higher education institutions in Indonesia on the entrepreneurial goal intention with the mediating effect of education training. The following research follows the quantitative research design because the researcher collects data based on numeric facts. Besides, the method used for the data collection is primary where the target population is dependent on the higher education institutions in Indonesia. Considering this, the researcher approached 30 higher education institutions in Indonesia to collect data. Online platforms were also used for data collection which includes emails, Google forms, and surveys which were distributed physically to the respondents.

### 4.2 Sampling Technique

To determine the sample within a population, the sampling technique by Etikan, Musa, and Alkassim (2016) was referred to and within this research, the researcher utilized the purposive sampling technique. As per the study of Roller and Lavrakas

(2015), purposive sampling is considered as non-probability sampling which is selective. In addition to the above statement, the researcher selected purposive sampling for data collection from the students and teachers of higher education institutions in Indonesia who have an entrepreneurial mindset. To determine the sample size of the study, the exact sample population was unknown. This is the reason why the formula for the infinite sample was considered which was prescribed by Herkenhoff and Fogli (2013) as,

$$n = \frac{z^2 \times p \times (1 - p)}{e^2}$$

To calculate the sample size of the study, the equation elaborates that 'z' is referred to as the standard score which has a value of 1.95 calculated at 95% confidence level and 'p' explains the proportion of the population which is intended for capturing the study. Furthermore, it is assumed that the value of p is 0.5 where the error is estimated at 5% (as the confidence level is 95%). After inserting the respective values into the equation, the value was obtained as,

$$n = \frac{(1.96)^2 \times 0.5 \times (1 - 0.5)}{(0.05)^2} = 384$$

This shows that the minimum sample for approaching the participants was estimated at 384. Therefore, at least 400 students and teachers were approached to have a higher response rate, however, only 314 questionnaires were returned and eligible. The response rate calculated for the study was 78.5%.

### 4.3 Research Instrument

The following research is based on a quantitative research design. The research instrument selected was a close-ended survey questionnaire. Moreover, the questions were based on a Likert scale which ranged from the scales of "strongly agree" to "strongly disagree". In addition to the above statement, the questionnaire was self-administered and was designed in simple language for better comprehension.

### 4.4 Data Analysis

The data which was gathered as per the above-mentioned techniques was analyzed with the help of Structural Equation Modelling (SEM). Moreover, the technique for the analysis used in this research was Partial Least Square (PLS) which does not require data that is normally distributed (Hair et al., 2016). Furthermore, the test which has been carried out on Smart PLS along with the results is based on the measurement model for the test of factor loadings, validity and reliability, path assessment, and the blindfolding technique which are mainly used for assessing the predictive relevance of the model.

## 5. Analysis and Results

### 5.1. Measurement Model- Partial Least Squares (PLS)

In this section, the researcher carried out CFA analysis to determine the measurement model of the study. The results for the measurement model are depicted in Table 1. For the first step, the reliability for each latent construct or variable was analyzed and as per the study conducted by Aykiran and Ringle (2018), the minimum acceptable value in the context of composite reliability along with the Cronbach's alpha was estimated at 0.6. As depicted in the table presented below, all the variables or the latent constructs were reliable as the least value within the context of composite reliability was calculated as 0.908, whereas within the context of Cronbach's alpha, the minimum value was computed as 0.874. Another aspect for the CFA analysis which is necessary to be considered is that the assessment of outer loading must have the threshold value of 0.6 as per the study conducted by Vinzi et al. (2010). In this consideration, Table 1 implies that there was no requirement to drop any variable as all factors within the outer loading were above the threshold value of 0.6 and the minimum computed value was estimated at 0.877. In addition to the above statement, the significance of the outer loadings with the support of bootstrapping identified a significant relation. Furthermore, considering the convergent validity, the relation of the latent constructs was analyzed and tested and for this purpose, AVE metrics were used with the threshold value of 0.5 (Jefferies and Cubric, 2015). Based on the AVE, it was estimated that the lowest value was calculated to be 0.664. This explains that the model is mainly composed of the reflective constructs in which the latent variables cause the indicators as highlighted by Hair et al. (2016).

**Table 1**  
Reliability and Convergent Validity of the Model

	Cronbach's Alpha	Outer Loadings	Composite Reliability	Average Variance Extracted (AVE)
Entrepreneurial Education	0.874	0.877	0.908	0.664
Entrepreneurial Training	0.915	0.915	0.94	0.797
Internal Locus of Control	0.936	0.936	0.954	0.839
Need for Achievement	0.887	0.892	0.93	0.816
Risk-Taking Propensity	0.894	0.894	0.934	0.825

Source: Primary Data

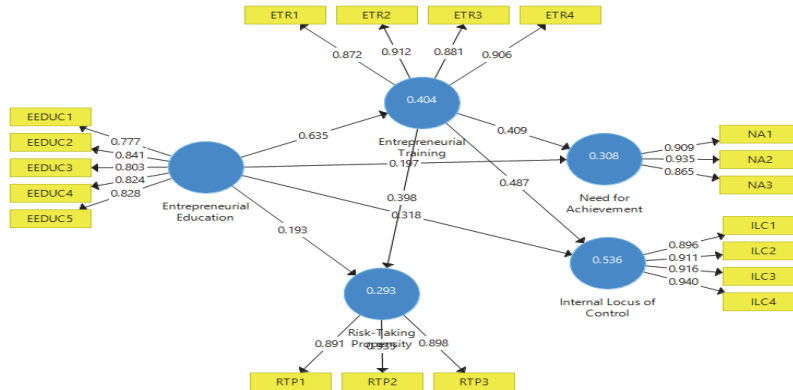
Table 2 reflects the determinant of the discriminant validity using the HTMT ratio which is mainly utilized to assess the distinctiveness of the variables (Ahram, Karwowski & Taiar, 2018). In this consideration, the HTMT ratio was used to assess

whether the variables are distinctive or not, and hence the maximum accepted value in this regard is 0.85 as per the conservative criterion. Thus, the results presented in Table 2 identified that few values violated the criteria based on the HTMT ratio. This explains that the part of the variables or constructs can be used for the path analysis as the maximum computed value is 0.916.

**Table 2**  
Discriminant Validity using HTMT Ratio

	Entrepreneurial Education	Entrepreneurial Training	Internal Locus of Control	Need for Achievement	Risk-Taking Propensity
Entrepreneurial Education	0.815				
Entrepreneurial Training	0.635	0.893			
Internal Locus of Control	0.628	0.690	0.916		
Need for Achievement	0.456	0.534	0.504	0.903	
Risk-Taking Propensity	0.446	0.520	0.465	0.511	0.908

Source: Primary Data



**Fig. 2.** Measurement Model (PLS Model)

Source: primary Data

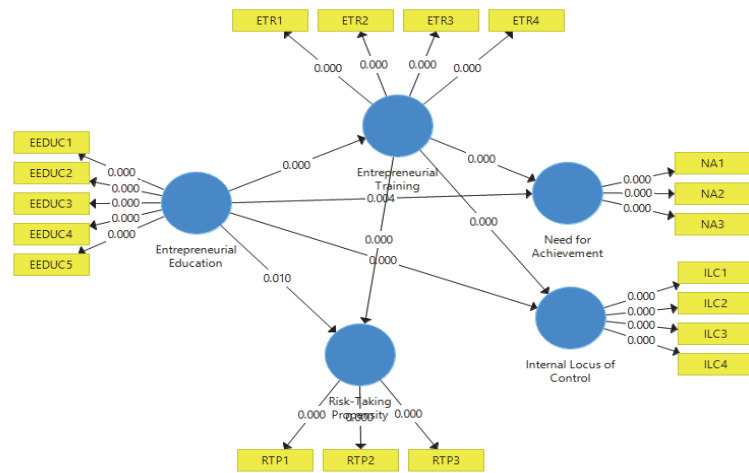
5.2. Path Analysis

The following section is based on the assessment for the measurement model which has helped the researcher determine the validity and reliability of the factors for the latent constructs. However, the significance level of the variables was tested through the path analysis in the SEM model. Also, the table and figure presented below explains the significance which was tested with the help of bootstrap. According to Hair et al. (2016), bootstrapping is referred to as the process for subsampling and resampling the significance of the variables. In terms of the results presented below, it can be asserted that the relationship between entrepreneurial education and entrepreneurial training is positive as the path co-efficient is estimated at 0.635 with the p-value estimated at 0.000 (B= 0.635; p-value= 0.000< 0.05) evaluated at 5% threshold level. Moreover, in the case of Indonesian higher institutions, it has also been evaluated that entrepreneurial education is also positively related to the internal locus of control which implies goal orientation (B= 0.318; p-value= 0.000< 0.05). This also applies to entrepreneurial education and the need for achievement as they are positively related in the case of higher education institutions in Indonesia (B=0.196; p-value=0.004<0.05) which is estimated at 5% threshold level. Besides, there is also a significant influence of entrepreneurial training on risk-taking propensity in the case of Indonesian higher education institutions (B=0.399; p-value=0.000<0.05). The results in Fig. 3 are presented following the application of bootstrapping with p-values. Hence, the prominent factors of the goal intention are directly in association with the entrepreneurial quality education programs. Table 4 below explains the total indirect effect of the study which helps in analyzing the mediators simultaneously. The table presented below explains that the mediating relation between entrepreneurial education and training is significant as the p= value is estimated at 0.000 which is below the threshold level of 0.05. Moreover, the mediation between entrepreneurial education and internal locus of control is significant because of the p-value which is estimated at 0.000 that is below the threshold level of 0.05.

**Table 3**  
Evaluation of the Path

	Path Coefficient	T Statistics	P Values
Entrepreneurial Education → Entrepreneurial Training	0.635	15.426	0.000
Entrepreneurial Education → Internal Locus of Control	0.318	4.802	0.000
Entrepreneurial Education → Need for Achievement	0.196	2.873	0.004
Entrepreneurial Education → Risk-Taking Propensity	0.192	2.576	0.010
Entrepreneurial Training → Internal Locus of Control	0.488	7.807	0.000
Entrepreneurial Training → Need for Achievement	0.409	6.115	0.000
Entrepreneurial Training → Risk-Taking Propensity	0.399	5.467	0.000

Source: Primary Data



Source: Primary Data

Fig. 3. Path Analysis of the Model (After Bootstrapping)

Table 4

Total Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Entrepreneurial Education → Entrepreneurial Training					
Entrepreneurial Education → Internal Locus of Control	0.310	0.307	0.043	7.185	0.000
Entrepreneurial Education → Need for Achievement	0.260	0.259	0.048	5.367	0.000
Entrepreneurial Education → Risk-Taking Propensity	0.253	0.252	0.053	4.783	0.000
Entrepreneurial Training → Internal Locus of Control					
Entrepreneurial Training → Need for Achievement					
Entrepreneurial Training → Risk-Taking Propensity					

Table 5 explains the total effects of the variable constructs. Moreover, the findings below explain that there is a significant relationship between entrepreneurial education and entrepreneurial training as the p-value is estimated at 0.000. Moreover, for entrepreneurial education, there is a significant impact on the internal locus of control because of the p-value below the threshold value.

Table 5

Total Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Entrepreneurial Education → Entrepreneurial Training	0.635	0.635	0.041	15.426	0.000
Entrepreneurial Education → Internal Locus of Control	0.628	0.628	0.047	13.354	0.000
Entrepreneurial Education → Need for Achievement	0.456	0.454	0.061	7.468	0.000
Entrepreneurial Education → Risk-Taking Propensity	0.445	0.444	0.063	7.082	0.000
Entrepreneurial Training → Internal Locus of Control	0.488	0.485	0.062	7.807	0.000
Entrepreneurial Training → Need for Achievement	0.409	0.407	0.067	6.115	0.000
Entrepreneurial Training → Risk-Taking Propensity	0.399	0.396	0.073	5.467	0.000

Source: Primary Data

5.3. Quality Criterion and Predictive Relevance

After assessing the measurement model, it is necessary to evaluate the quality of the model along with its predictive relevance. As per the study carried out by Miller (2014), it was assessed that adjusted R-square and R-square assisted in the evaluation of the model within the context of quality. In this study, the results were derived based on the variables as entrepreneurial training, internal locus of control, need for achievement, and risk-taking propensity. Based on the table, the R-square of entrepreneurial training was 40.4% which was further adjusted to 40.2%. In the case of internal locus of control, the R-square was estimated at 53.6% which was adjusted to 53.3%. Furthermore, for the need for achievement, R-square was estimated at 30.8% which was further adjusted to 30.4%.

Table 6

Evaluation of Quality Criterion and Predictive Relevance

	R Square	R Square Adjusted
Entrepreneurial Training	0.404	0.402
Internal Locus of Control	0.536	0.533
Need for Achievement	0.308	0.304
Risk-Taking Propensity	0.293	0.289

Source: Primary Data

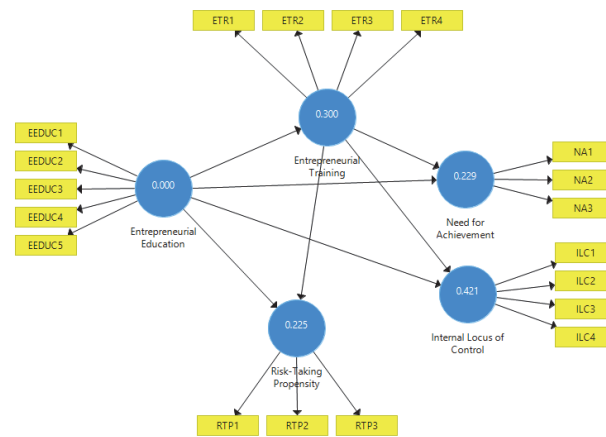


Fig. 3. Blindfolding Test of the Model Source: PIS Analysis

Propositions	Decision
H1: There is a significant impact of entrepreneurship education programs on the need for achievement.	Accepted
H2: There is a significant impact of entrepreneurship education quality program on internal locus of control.	Accepted
H3: There is a significant impact of entrepreneurship quality education programs on risk-taking propensity.	Accepted
H4: Entrepreneurial training mediates the relationship between entrepreneurship education programs and entrepreneurial goal intentions.	Accepted

## 6. Conclusion

The following study suggests that the improvement and reorganization of the curriculum and programs are necessary for entrepreneurial education and training. In the first place, the different entrepreneurial education programs and courses mainly focus on the financial aspects of business ownership which helps in planning business activities. The findings mainly prove that entrepreneurial training is mainly influenced by the need for achievement, locus of control, and risk propensity. The results further demonstrate that entrepreneurial education directly influences the goal intentions of entrepreneurs along with entrepreneurial training. Hence, it can be suggested that the exposure for the student in higher education institutions in Indonesia towards entrepreneurship education has certain ramifications concerning entrepreneurial training.

## 7. Limitations of the Research

The major focus of the study was to evaluate the effectiveness of entrepreneurship education programs in influencing the entrepreneurial intentions of different individuals in Indonesia. Since this study focuses on one geographical location, the findings did not apply to the different regions. The underlying study lacks in terms of qualitative information because the researcher employed to focus on the quantitative data that prevented from covering the qualitative aspects. Some relevant journal articles were also provided in the premium version that restricted the researcher from obtaining relevant information and develop further constructive arguments. A limited sample size was taken in this study due to the time constraints because a large amount of data requires more time for the examination.

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