



# Improving Students' Entrepreneurship Intention Through Entrepreneurship Education with Opportunity Recognition as an Intervening Variable

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

**Aims:** The unemployment rate is very high. To reduce this, a large number of jobs are needed. If for a few years ago, university graduates were oriented to get a job after graduation, then with the existence of entrepreneurship education, they will be able to change the orientation of students to be able to create new jobs through entrepreneurship.

**Study Design:** Quantitative Research.

**Methodology:** This study explores the entrepreneurship education carried out in universities by distributing research questionnaires to 123 students of the Faculty of Economics and Business, University of Technology, Sumbawa using an incidental sampling technique. The data obtained were then processed by researchers using structural equation modeling (SEM) analysis.

**Results:** The results prove that there is a direct effect of entrepreneurship education and opportunity recognition on entrepreneurial intention. To prove that there is an indirect effect, the Sobel test is carried out. After conducting the Sobel test, the results are it was concluded that opportunity recognition is a variable that mediates the relationship between entrepreneurship education and entrepreneurial intentions because the Sobel test score  $4.495 > 1.960$ .

**Conclusion:** Entrepreneurship education can increase opportunity recognition. Then, opportunity recognition directly affects students' intentions to become entrepreneurs. Entrepreneurship education in the study was found to increase students' entrepreneurial.

*Keywords: Entrepreneurship education; opportunity recognition; entrepreneurial intentions.*

## 1. INTRODUCTION

National education has a future vision to form Indonesian people who have a dignified character as mandated by Law no. 20 of 2003. The achievement of these goals is still very difficult to know with certainty in relation to the formation of entrepreneurial attitudes and behavior of students. So far, the measurement has been carried out using qualitative methods without any national standards that can be used as a guide for the assessment. Since the implementation of the decentralized system, it has resulted in changes in several aspects of life, including in the field of education. Decentralization gives management freedom to manage education. This is used as a strategy in the management of education that is useful for producing higher quality outputs academically or non-academically. Academic quality is related to improving the quality of students related to the field of science they are engaged in, while non-academic itself is related to the ability of students to be able to work independently by opening businesses or creating jobs independently. Or it can be said that education graduates are required to be able to have high entrepreneurial behavior.

Throughout the world entrepreneurship has become very important and has become the focus of various countries including Indonesia. Even the economic progress of a country is measured using the number of entrepreneurs owned by that country [1]. Currently, the number of entrepreneurs in Indonesia is 3.47% of the total population. This figure increased from the previous year but was still lower when compared to countries such as Thailand where the number of entrepreneurs was 4.26%, while Malaysia was 4.74% and Singapore was 8.76% [2]. Therefore, the Indonesian government must encourage its citizens to become entrepreneurs. One of the efforts made by the Government is to involve universities by including entrepreneurship courses in the university curriculum in order to create an entrepreneurial ecosystem on campus so that later it will encourage students to intend to become entrepreneurs.

Sumbawa University of Technology, hereinafter abbreviated as UTS, is one of the universities in Indonesia that is committed to forming the entrepreneurial spirit of its graduates by equipping students with entrepreneurship and technopreneurship courses which are made one of the mandatory courses at the Faculty of Economics and Business. In addition, the coordinator of a business incubation center for students is appointed with the aim of creating an entrepreneurial environment and providing opportunities for access to capital for student businesses. This entrepreneurial environment was formed with the aim of building students' intentions to become entrepreneurs. With this interest in entrepreneurship, it will then lead to entrepreneurial behavior [3]. Students' readiness to become entrepreneurs in the future can be seen from their interest in entrepreneurship [4]. An important factor that can foster interest in entrepreneurship is entrepreneurship education [5].

Entrepreneurship education provides students with the motivation, knowledge and skills that are important to be able to make the business they start a success [6]. Another purpose is as a consideration for students to become their jobs in the future by developing a positive attitude towards entrepreneurship [7]. Several studies have found that entrepreneurship education affects entrepreneurial intentions [8]. While research conducted by Khalifa & Dhiyf [9] found the opposite.

Entrepreneurship education will then be able to make students have the ability to see business opportunities (opportunity recognition). The ability to read opportunities is the most important thing for an entrepreneur to have before he/she can then start his/her business [10]. Research conducted by Abuzuhri & Hashim [11] stated that entrepreneurship education can affect opportunity recognition. However, the opposite was stated by Min-jung & Park [12], opportunity recognition is not influenced by entrepreneurship education.

Entrepreneurship is the study of who, how and what influences a person to create goods and

services that suit the future [13]. So opportunity recognition is very important for entrepreneurs because it is a process of discovering new business ideas that have a tendency to experience profits in the future [14]. Students who have opportunity recognition are students who are able to see the possibility of a business to be run because it has potential profits. Research conducted by Rambe [15] argued that students who have opportunity recognition will be interested in becoming entrepreneurs.

Based on the above background, this study raises the first issue, namely whether there is an effect of education entrepreneurship on entrepreneurial intentions. whether there is an effect of education entrepreneurship on opportunity recognition. and third, is there any effect of opportunity recognition on entrepreneurial intentions.

## 2. MATERIALS AND METHODS

This study performs a structural equation modeling partial least square (SEM-PLS) analysis through four stages including [16]:

1. Creating Inner Models
2. Creating Outer Models
3. Conducting Model Evaluation
4. Doing Hypothesis Testing

The sampling technique used incidental sampling with a total of 123 respondents who were students of the UTS Faculty of Economics and Business. Descriptive analysis using the three box method by Ferdinand [17] with a range of index values as follows :

70.01 – 100.00	: High
40.01 – 70.00	: Moderate
10.00 – 40.00	: Low

## 3. RESULTS AND DISCUSSION

### 3.1 Descriptive Statistics

This study uses 3 research variables, namely 1) entrepreneurship education, 2) opportunity recognition, and 3) entrepreneurial intentions. The three box method is used in this study to try to describe the perceptions of the respondents regarding the statement items given in the questionnaire.

The results in Table 1 show that according to respondents' perceptions of entrepreneurship education provided through entrepreneurship

and technopreneurship courses is able to provide students with experience and ability to be more creative, innovative, realistic, independent and communicative.

Respondents' perceptions of the statement of the opportunity recognition variable stated that students have a high ability to read opportunities to open new businesses. However, there is one statement that has a moderate category.

The entrepreneurial intention of students is very high. This can be seen from the results of the student perception index. This indicates that the desire of students to be able to open a new business or do business is very large.

### 3.2 Creating Inner Models

The first step in analyzing structural equation modeling (SEM) is to create an inner model Fig. 1.

### 3.3 Creating Outer Models

This study uses reflective indicators. The following is an image for the outer research model Fig. 1.

### 3.4 Conducting Model Evaluation

The first step is to evaluate the outer model, which is to assess whether the prepared statements have been used to measure the variables (valid) and how consistent the measuring instruments used are (reliable). It is said to be valid if the discriminant validity value is  $> 0.60$  or the average variance extracted value is  $> 0.50$  [16].

There is only one invalid statement after testing, namely the OR1 statement of the opportunity recognition variable. So the researcher omitted the statement from the research instrument. After testing the validity, the next step is to do a reliability test with the criteria for variables that are declared reliable are those that have a Cronbach alpha value and composite reliability  $> 0.60$  [16].

From Table 6 it is known that all the values of Cronbach's alpha and composite reliability variables are above 0.70 so it can be concluded that they are reliable. The next step is to evaluate the inner structural model. The model is said to be good if the R-Square value  $> 0.67$ , moderate if R-Square  $> 0.33$ , and declared weak if R-Square  $> 0.19$  [16].

**Table 1. Entrepreneurship education perception index**

Statement	Index (%)	Category
EE1	81.30	High
EE2	90.57	High
EE3	85.53	High
EE4	84.72	High
EE5	86.18	High
Total	85.66	High

Source: Research processed data, 2021

**Table 2. Perception index of opportunity recognition**

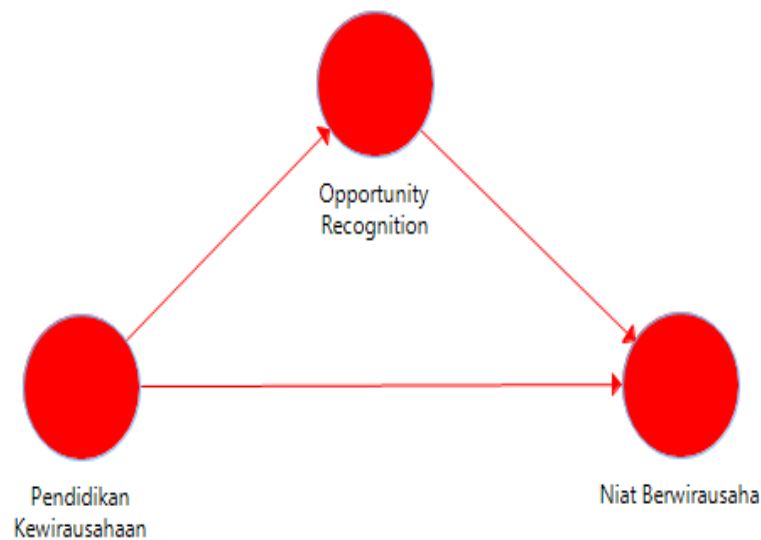
Statement	Index (%)	Category
OR1	66.99	Moderate
OR2	78.05	High
OR3	81.14	High
OR4	76.91	High
OR5	82.28	High
OR6	78.05	High
OR7	86.18	High
Total	77.07	High

Source: Research processed data, 2021

**Table 3. Entrepreneurial intention perception index**

Statement	Index (%)	Category
E11	89.43	High
E12	82.93	High
E13	81.79	High
E14	80.81	High
E15	83.58	High
E16	85.85	High
Total	84.07	High

Source: Research processed data, 2021



**Fig. 1. Inner model**

Source: Software SmartPLS 3.0 (2020)

**Table 4. Cross loading**

Indicator	Entrepreneurial Intentions	Opportunity Recognition	Entrepreneurship Education
E11	0.697	0.473	0.538
E12	0.731	0.504	0.406
E13	0.792	0.611	0.562
E14	0.812	0.590	0.497
E15	0.828	0.588	0.536
E16	0.694	0.521	0.514
OR1	0.455	0.583	0.327
OR2	0.450	0.679	0.429
OR3	0.563	0.792	0.586
OR4	0.560	0.780	0.550
OR5	0.600	0.780	0.556
OR6	0.515	0.687	0.493
OR7	0.444	0.658	0.523
EE1	0.599	0.564	0.726
EE2	0.433	0.549	0.788
EE3	0.498	0.536	0.742
EE4	0.460	0.464	0.785
EE5	0.530	0.541	0.752

Source: Research processed data, 2021

**Table 5. Validity test**

Indicator	Cross loading	AVE	Category
E11	0.697	0.579	Valid
E12	0.731		Valid
E13	0.792		Valid
E14	0.812		Valid
E15	0.828		Valid
E16	0.694		Valid
OR1	0.583	0.507	Invalid
OR2	0.679		Valid
OR3	0.792		Valid
OR4	0.780		Valid
OR5	0.780		Valid
OR6	0.687		Valid
OR7	0.658		Valid
EE1	0.726	0.576	Valid
EE2	0.788		Valid
EE3	0.742		Valid
EE4	0.785		Valid
EE5	0.752		Valid

Source: Research processed data, 2021

**Table 6. Reliability test**

Construct	Cronbach Alpha	Composite Reliability
Entrepreneurial Intention	0.853	0.891
Opportunity Recognition	0.836	0.877
Entrepreneurship Education	0.816	0.872

Source: Research processed data, 2021

**Table 7. Evaluation of the inner model**

Construct	R-Square	Status
Entrepreneurial Intention	0.569	Moderate
Opportunity Recognition	0.491	Moderate

Source: Research processed data, 2021

**Table 8. Hypothesis testing**

Construct	Original Sample	T Statistics	Status (>1,960)
PK → NB	0.334	3,506	Significant
PK → OR	0.771	11,426	Significant
OR → NB	0.474	4,905	Significant

Source: Research processed data, 2021

Measuring how well the model predicts entrepreneurial intentions can be done by using the relevance of predictions (Q-square), the following is the calculation:

$$\begin{aligned}
 Q2 &= 1 - (1-R12) (1-R22) \\
 &= 1 - (1-0.491)(1-0.569) \\
 &= 0.7804 (78.04\%)
 \end{aligned}$$

### 3.5 Doing Hypothesis Testing

Proof of the effect of exogenous variables on endogenous variables was carried out by statistical t test. The hypothesis is accepted if the value of t statistic > 1.960 [16]. The test results can be seen Table 8.

Table 8 shows that there is a direct effect of entrepreneurship education on opportunity recognition (Hypothesis 1), entrepreneurship education on entrepreneurial intentions (Hypothesis 2), and opportunity recognition on entrepreneurial intentions (Hypothesis 3). The three research hypotheses were accepted. After conducting the Sobel test, it was concluded that opportunity recognition is a variable that mediates the relationship between entrepreneurship education and entrepreneurial intentions because the Sobel test score (4.495) > 1.960

## 4. DISCUSSION

Entrepreneurship education provided by the Faculty of Economics and business through two courses namely entrepreneurship and technopreneurship provides students with the ability and skills to be creative, innovative, realistic, independent, and communicative. This then makes students able to produce a product, encourages the emergence of student creativity in making products, makes students accustomed

to analyzing data, dares them to make their own decisions and finally communicates their business ideas to others. These abilities and skills then encourage the emergence of students' intentions to become entrepreneurs. Samydevan et al. [18] also found similar results that entrepreneurship education provided to students in various countries was able to foster a student's desire for entrepreneurship which would then contribute to reducing unemployment.

Entrepreneurship education applied at the Faculty of Economics and Business also enables students to recognize business opportunities or have opportunity recognition abilities. The results of the study found that opportunity recognition can be increased through entrepreneurship education. Programs carried out through entrepreneurship education are able to equip students with the ability to be able to discuss issues so that this can then increase students ability to see opportunities to do business.[19]. Research conducted by Wei et al. [20] also found the same result, namely entrepreneurship education will increase the ability of opportunity recognition.

Students who are equipped with entrepreneurship education will be able to see and read opportunities in doing business. It is important for students to have Opportunity recognition because the results of the study found that it was able to increase students' intention to become entrepreneurs. In the midst of very tight business competition today, the ability to recognize business opportunities is very important to have so that later the business that will be carried out by students has the potential to develop in the future. The results of this study are in line with research conducted by RaMBE [15].

## 5. CONCLUSION

Entrepreneurship education can increase opportunity recognition. Then, opportunity recognition directly affects students' intentions to become entrepreneurs. Entrepreneurship education in the study was found to increase students' entrepreneurial intentions. Furthermore, researchers are advised to add other variables that can increase entrepreneurial intentions such as the surrounding environment, self-efficacy and locus of control.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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