The Linkage of Entrepreneurship Education and Students' Entrepreneurial Readiness: The Mediating Role of Entrepreneurship Ecosystem

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Entrepreneurship takes an essential role in the economy of a nation. Therefore, enlarging the number of new entrepreneurs can be initiated from schools or college graduates. The study aims to investigate a linkage between entrepreneurship education, entrepreneurship ecosystem, and students' entrepreneurial readiness in Indonesia. This research method used explanatory research with a quantitative approach using structural equation modeling with partial least squares (SEM-PLS). The data of this research were gathered from online questionnaires in some areas in East Java of Indonesia. The findings of this research reveal that entrepreneurship education takes a significant role in dealing with students' entrepreneurial readiness. This study also confirms the role of entrepreneurial ecosystem in mediating this relationship.

Keywords: entrepreneurship education, entrepreneurship ecosystem, entrepreneurial intention

INTRODUCTION

Entrepreneurship has been acknowledged as a driver in addressing economic problems in a nation (Liguori et al., 2018; Rakib et al., 2020). Therefore, it is necessary to enhance the number of entrepreneurs. To support entrepreneurship growth, it needs to create an ecosystem that facilitates the birth and growth of entrepreneurs., i.e., coaching, financing, and networking (Badzinska, 2021, Stam et al., 2021; Wurth et al., 2021). The basic rationale is that entrepreneurs are not arisen immediately from an individual but through a process and develop well in an entrepreneurial ecosystem. Similarly, Ratten (2020); Khatami et al. (2021) also stated that business opportunities do not come from an empty space, and in entrepreneurship, there are interactions that occur between actors with interest in company growth. In a dynamic ecosystem, new businesses have more opportunities to grow and generate existing jobs (Isenberg, 2010).

Based on a 2018 report from the Aspen Network of Development Entrepreneurs, it explains that the entrepreneurial ecosystem covers eight areas, namely: policies, financial engagement, human capital development, market availability, business encouragement, infrastructure development, research, and development. Colombo et al. (2019) also remarked that, in general, the entrepreneurial ecosystem consists of easy market access, human resources, capital and financing, support networks, policies and regulations, training and socialization, availability of educational institutions, social support, and cultural factors. The entrepreneurial ecosystem model emphasizes the linkages between actors to produce productive entrepreneurs and give birth to new entrepreneurs (Cavallo et al., 2019; Wijaya et al., 2020)

Many studies on the theme of entrepreneurial ecosystems incorporate the matter of the entrepreneurial ecosystem on the development of micro or macro enterprises (e.g., Ali et al., 2019; Duan et al., 2021). Those previous studies stated that the entrepreneurial ecosystem has linked with several dimensions that promote the initiation of new entrepreneurs. Therefore, new entrepreneurs can appear and enhance not from individuals instead from talents, and visionaries. New business opportunities also occur due to the support from the ecosystem that enables them to be more intentional in starting entrepreneurship. Unfortunately, few studies have investigated the entrepreneurial ecosystem in students through entrepreneurship education in increasing students' readiness for entrepreneurship.

The entrepreneurial readiness of Indonesian is inadequate, as can be seen from the data on the interest in entrepreneurship of the Indonesians, approximately 0.18% of the total population that would like to be entrepreneurs. The courage to start is the main capital that a person must have to enter the business world. However, courage alone is not enough, courage without entrepreneurial skills and abilities often leads us to failure. Entrepreneurial readiness in this study is the willingness, desire and ability to become an entrepreneur in this case depending on the level of maturity, past experience, mental and emotional state of a person. Depart from the condition of low entrepreneurial readiness among students, this paper aims to identify a linkage between entrepreneurship education, entrepreneurial ecosystem, and entrepreneurial readiness among Indonesian students. It is expected to provide consideration in vocational secondary education to refine entrepreneurship programs and broaden the horizons of the entrepreneurial ecosystem.

RESEARCH METHODS

Design, Materials, and Approach

The survey adopted a quantitative approach and involved structural equation modeling for data analysis in reaching the model and confirming the hypothesis of the paper. The validity and reliability calculation follows the criteria of Hair et al. (2020), which covers convergent and discriminant validity, as well as composite reliability. The sample was collected from 250 vocational school students in East Java of Indonesia. The instrument was performed using Google form and distributed via WhatsApp. The criteria for selected vocational schools concern entrepreneurial activities and training programs. The instruments were constructed from relevant theories and preliminary studies. The items are provided on the five-Likert scale for 1=indicating strongly agree, and 5=indicating strongly disagree.

Measurements

The instruments of this study were adopted from preliminary studies. In detail, entrepreneurship education was measured by 12 items that fulfilled the criteria of convergent validity with indicator including: (1) My school elaborates the required knowledge and information toward entrepreneurship, (2) Entrepreneurship education in schools is increasing, (3) Education in school allows students to be more innovative (4) Education in school promotes students to develop creative ideas to become an entrepreneur, (5) School promotes students to enhance entrepreneurial entrepreneurial skills and abilities, (6) Entrepreneurship education at school enhances my entrepreneurial ecosystem, (7) Entrepreneurship education at school increased my readiness to open a business, (8) Entrepreneurship education at school increased my understanding of the individual characteristics of entrepreneurs, such as facing challenges, innovation, leadership, and innovation, (9) Entrepreneurship education improves my understanding of various entrepreneurial motivations, (10) The creative atmosphere in entrepreneurship education inspires

ideas to be better prepared for entrepreneurship, (11) The role models of teachers at school gave me the idea of entrepreneurship, (12) Entrepreneurship education at school improved my skills in establishing and developing readiness to open a business.

Meanwhile, entrepreneurial ecosystem was calculated by nine items that fulfilled the criteria of convergent validity with indicator including: (1) Entrepreneurship facilities and infrastructure in schools support the practice of entrepreneurship, (2) After doing entrepreneurship practice and receiving entrepreneurship education I can find out business opportunities, (3) After gaining practical experience and entrepreneurship education I was able to determine the idea to open my own business, (4) After gaining practical experience and entrepreneurship education can improve the spirit of leadership and the ability to think to become entrepreneurs, (5) With the facilities and infrastructure of entrepreneurship in schools can improve entrepreneurial learning, (6) Entrepreneurship education materials taught by teachers are in accordance with the practices carried out in the field, (7) With the practice of entrepreneurship, it can instill readiness in opening a business, (8) In the practice of entrepreneurship, it gives me the opportunity to have financial management skills in entrepreneurship, (1) After doing entrepreneurship practice I can understand the market.

In this study, entrepreneurial readiness was measured by eight items that fulfilled the criteria of convergent validity with indicators including: (1) Following the practice and education of entrepreneurship, I understand more about entrepreneurship, (2) Participating in entrepreneurship education in schools and entrepreneurship practices makes me more daring to be an entrepreneur in the future, (3) Having knowledge, students ready to make any effort to become an entrepreneur, (4) Having I will try my best to initiate and enhance my own business, (5) Currently I already have a plan to open a business/entrepreneur, (6) I dare to take risks in entrepreneurship, (7) I can work with suitable business partners, (8) I believe that everyone has same opportunity to succeed in entrepreneurs based on the available resources.

Data Analysis

In this study, the validity test in the instrument trial at least used content, predictive, and construct validity. Reliability test to determine the consistency of the data obtained and the accuracy of the measurements. The data analysis adopted in this study consisted of descriptive statistical analysis using a frequency distribution table with the meaning of grand mean for each variable and inferential statistical analysis. In this study, Structural Equation Model with Partial Least Square Approach (SEM-PLS) using the SmartPLS 3.0 software was also elaborated to propose a model and confirm the hypothesis. The SEM-PLS steps in this study refer to the procedure developed by Hair et al. (2013), including measurement of the model (outer model), estimation of the structural model (inner model), testing of the model fit, and confirming the hypothesis.

RESULTS AND DISCUSSION

The Outer Model

The gathered data were evaluated for validity and reliability before testing the hypotheses. First, Cronbach's alpha (α), Average variance extracted (AVE), and Composite reliability (CR) were applied to estimate the reliability and validity (Hair et al., 2020). Second, structural equation modeling was adopted to estimate the relationship between variables involved in this study. It indicates that entrepreneurial education (X) has been provided by 11 items, entrepreneurial ecosystem (Z) is proxied by nine items, and eight items of questionnaires measure entrepreneurship readiness (Y). The loading factor for the variables involves a range from 0.720 to 0.858 (0>0.70), meaning to meet the convergent validity (Hair et al., 2020; 2013). The score of Cronbach alpha (α) and Composite Reliability (CR) for entrepreneurial education are 0.940 and 0.948; the entrepreneurial ecosystem is 0.930 and 0.941; entrepreneurship readiness is 0.926 and 0.939, indicating to accomplish the composite reliability criteria by Hair et al. (2020). Table 3 informs the convergent validity, which AVE shows for every latent was upper than recommended value (0.50). From the table, it can be proven that AVE ranges from 0.605-0.640 to achieve convergent validity. Additionally,

divergent validity can be performed by comparing its correlation with other latent variables. Table 3 represents that every latent construct is higher than other latent.

Inner Model

The collinearity test was carried out to see whether there was high collinearity between variables or not. The way to do this is to look at the value of the Variance Inflation Factor (VIF) coefficient, where the VIF value needs to be under 5.00 (Hair et al., 2013). The results of data analysis regarding the value of the VIF coefficient are described in Table 1. Referring the Table, it can be known that the VIF value of the entrepreneurial ecosystem variable, interest in entrepreneurship, and entrepreneurial education are lower than 5.00, so there is no collinearity (Hair et al., 2013). In summary, all indicators are decided as valid.

TABLE 1
INNER MODEL ESTIMATION

Variable	Entrepreneurial Ecosystem	Entrepreneurial Readiness	Entrepreneurship education
Entrepreneurial Ecosystem		4.227	
Entrepreneurial Readiness			
Entrepreneurship education	1.000	4.227	

Testing the Path Coefficient

The output of the bootstrapping calculation reveal the stability of the PLS-SEM model. In addition, the data was processed undergoing 500 bootstrapped samples. Based on the table, it can be pinned that the path coefficient value is < 0.05. The results of data analysis regarding the path coefficient test are described in Table 2.

TABLE 2
PATH COEFFICIENT

The Relationship Between Variables	Path Coefficient
Entrepreneurial ecosystem → Entrepreneurial readiness	0.000
Entrepreneurship education → Entrepreneurial ecosystem	0.000
Entrepreneurship education → Entrepreneurial readiness	0.005

The Determinantion of R^2, f^2, and Q^2

Based on preliminary estimation, R^2 in the entrepreneurial ecosystem is 0.763. This means that the entrepreneurial education variable is able to explain the entrepreneurial ecosystem by 0.763 > 0.67, when referring to the opinion of Chin (1998) it shows that the model is robust. The value of R^2 on the interest in entrepreneurship is 0.624. This means that the variables of entrepreneurship education and entrepreneurship ecosystem are able to explain the interest in entrepreneurship by 0.624 > 0.33, when referring to the opinion of Chin (1998) it shows that the model is moderate. Furthermore, this study uses a prerequisite test in the form of an effect/influence size test (f^2). As for determining the results of the effect/influence size test (f^2), this study uses the rule of the thumb from Hair et al (2013). The statistical output results show that the entrepreneurial ecosystem on entrepreneurial interest is 0.199 > 0.15, when referring to the opinion of Chin (1998) it shows a medium effect. the value of f^2 on entrepreneurship education on the entrepreneurial ecosystem is 3.227 > 0.35, when referring to the opinion of Chin (1998) it shows a large influence. The value of f^2 on entrepreneurship education on interest in entrepreneurship is 0.039 > 0.02, when referring to the opinion of Chin (1998) it shows a small effect. This study also conducted a Q^2 relevant prediction test which aims to measure how well the observed values generated by the model, as well as parameter estimates. Based on the test results, it is known that the Q^2 value of the variables of entrepreneurship

education, entrepreneurial ecosystem, and interest in entrepreneurship is greater than 0. Thus, the model has predictive relevance.

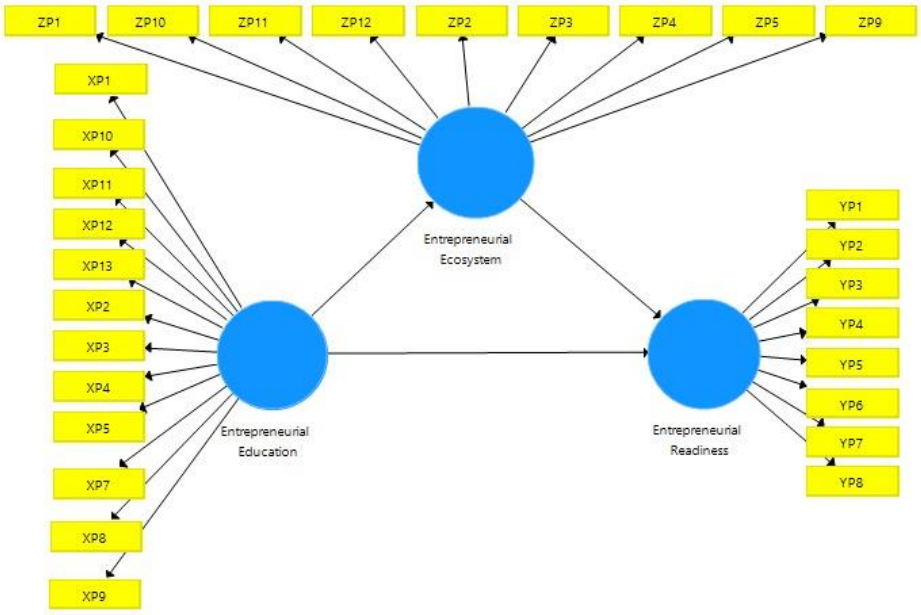
Hypothesis Testing

The information on hypothesis testing is provided in Table 3. The output data of the table showed that all hypotheses proposed was to meet the criteria (t-count >1.96 and p-value <0.05). For instance, the relationship between entrepreneurial ecosystem and readiness is illustrated in 6.409 (>1.96) with p-value 0.000 (<0.05). Table 3 also informs the role entrepreneurial ecosystem in mediating entrepreneurship education and ecosystem. Furthermore, the output of the structural model is provided in Figure 1.

TABLE 3
DIRECT AND INDIRECT INFLUENCE

Direct Influence	T-count	P-value
Entrepreneurial ecosystem → Entrepreneurial readiness	6.409	0.000
Entrepreneurship education → Entrepreneurial ecosystem	47.761	0.000
Entrepreneurship education → Entrepreneurial readiness	2.822	0.005
Indirect Influence		
Entrepreneurship education → Entrepreneurial ecosystem → Entrepreneurial readiness	6.449	0.000

FIGURE 1
STRUCTURAL MODEL



Discussion

Based on the results of data analysis, it can be seen that entrepreneurship education has an effect on interest in entrepreneurship. The results of this study are supported by previous research by Setiawan (2016), Putri (2017), and Sintya (2019). Entrepreneurship education in this study has a considerable influence, this is also due to the lack of students in using school facilities that can support students for entrepreneurship. For example, by using the business center provided by the school to support student entrepreneurship, students are allowed to pick up goods at the business center first and pay when the items

taken are sold. In schools, open bazaars are often held for all students from each class are required to sell their innovative products so that their courage to become entrepreneurs increases. The high interest in entrepreneurship in Vocational High School (SMK) students can be seen in the career choices of students after being declared to have graduated from Vocational High School.

In addition, the results of this study are supported by previous research by Kwon (2016), Huang (2021), and Lai & To (2020). Entrepreneurship also develops the concept of an entrepreneurial ecosystem as a strategy to drive the regional economy. In 2010, Isenberg developed the intervention orientation Babson Entrepreneurship Ecosystem Platform (BEEP) which was launched and operated as a regional economic development project. This step becomes an important entrepreneurial variable to find out the number of companies starting to stand, or how many companies are growing. In general, the dimensions of the entrepreneurial ecosystem are composed of policy, infrastructure, cultural, human capital, market, and finance (Isenberg. 2011). Entrepreneurial intentions in a person can be seen from two main indicators, First, how strong a person's efforts are against the challenge of trying activities. entrepreneurship, and secondly how much effort a person plans to carry out entrepreneurial activities (Nasution, 2007).

Based on the results of data analysis, it can be seen that entrepreneurship education has an indirect effect on interest in entrepreneurship through the entrepreneurial ecosystem. Entrepreneurship education is no less important than the background for business success. Entrepreneurial education or entrepreneurship education is an educational program that focuses on entrepreneurship in an effort to internalize the entrepreneurial spirit and mentality through educational institutions. Based on entrepreneurship education, it can be a tool to shape entrepreneurial character, and increase competence, skills, and knowledge of entrepreneurship. Education makes individuals more confident, and able to choose and make the right decisions. The reality in the field, the current learning system has not fully effectively built students to have noble character and national character, including entrepreneurial character. The learning process in SMK has not been fully able to build the potential of entrepreneurial personality. This is shown, among other things, by the relatively high number of unemployed, relatively few entrepreneurs, and the occurrence of moral degradation (Kemendiknas, 2010). Provision of entrepreneurial knowledge to vocational students is very necessary. The higher the entrepreneurial knowledge of SMK students, the more open their insights about entrepreneurship will be. The entrepreneurial ecosystem has become an approach that is widely used, however, research that explains how factors and actors interact and can lead to the desired economic development results cannot be said to be optimal. It is clear that the objectives of the various stakeholders and actors in the entrepreneurial ecosystem are different, but at the same time can substantially overlap. Strategic studies show that the business ecosystem generates a competitive advantage for each partner in the ecosystem (Clarysse et al., 2014).

CONCLUSION

Based on the discussion of the research results, it is known that entrepreneurship education is in an outstanding category. This study remarked on the essential role of the entrepreneurial ecosystem and entrepreneurship education in determining students' entrepreneurial readiness. The implication of this study will provide useful information about the role of entrepreneurship education and the entrepreneurial ecosystem in promoting entrepreneurship readiness among vocational school students. Additionally, it can be useful for policy research, practitioners, and government to develop an entrepreneurship education model for the vocational school level as an attempt to boost entrepreneurial activities and the entrepreneurial ecosystem. The findings can be served as useful references for scholars who are concerned with the entrepreneurship theme, primarily in fostering entrepreneurship education and an entrepreneurial ecosystem.

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