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The Linking of Entrepreneurship Education and Entrepreneurial Readiness: The Mediating Role of Entrepreneurial Ecosystem

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Abstract

This study aims to determine the linkage between Entrepreneurship Education and Entrepreneurial Ecosystem on Entrepreneurship Readiness among students of SMKN Tembilahan, Indragiri Hilir Regency. This research is a quantitative study with a research population of as many as 312 students, and the research sample was 175 students. This research instrument is a questionnaire developed from each research variable. The data were analyzed using Structural Equation Modeling (SEM) analysis with the Partial Least Square method. The results showed that entrepreneurship education has a positive and significant effect on entrepreneurial readiness. The mediation test results confirm that the entrepreneurial ecosystem doesn't mediate the effect of entrepreneurship education on entrepreneurial readiness. This indicates that schools may not have adequate infrastructure to stimulate entrepreneurial interest among students. The study's findings offer significant insights into how entrepreneurship education and entrepreneurial ecosystem can help vocational students to enhance entrepreneurial readiness.

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INTRODUCTION

The phenomenon of low entrepreneurial intentions and readiness among young people has been discussed and debated over the last decade (Nguyen, 2020). Entrepreneurship is recognized as a key driver in addressing a country's economic problems (Ogunlana, 2018; Sagar et al., 2023). By foresting innovation and technological advancement, entrepreneurship can increase productivity through increased competition, create new jobs, and improve efficiency (Juliana et al., 2021; Shkabatur et al., 2022), and all of which can help reduce unemployment (Kallas & Parts, 2021). Due to the significant impact of entrepreneurship, numerous nations, including Indonesia, are competing to produce entrepreneurs who will propel their economies (Khamimah, 2021; Titien, 2017).

The lack of readiness of young people in entrepreneurial activities will continue to trigger concerns about new business creation opportunities (Olugbola, 2017). Entrepreneurial readiness, which is influenced by the attitude of each individual (Mahfud et al., 2020; Nguyen et al., 2019), is a serious concern for all parties, including the government, education, business, and society (Dora, 2019). In the context of the industrial era 4.0, young people need to develop entrepreneurial skills, which are essential skills for the 21st century. This ability plays a major role in improving economic efficiency, introducing innovations to the market, creating new jobs, and maintaining existing employment levels (Shane, 2003).

The concept of entrepreneurial readiness is seen as a combination of personal competence and the potential to engage in entrepreneurial activity, including the intention to start a business, and is determined by various individual and environmental factors (Rakicevic et al., 2022). According to (Hermawan et al., 2022), entrepreneurial readiness is the initial foundation needed to face various opportunities and challenges in the entrepreneurial world. Entrepreneurial readiness depends on an individual's ability to explore existing opportunities, maximize entrepreneurial capabilities, and motivate oneself to achieve (Olugbola, 2017). Therefore, entrepreneurial readiness has the potential to create young entrepreneurs, as well as help individuals to get a job or even create jobs.

Data from Ceoworld magazine's Entrepreneurship Index shows that Indonesia ranks 45th out of the 100 most entrepreneurial countries in the world in 2024 with a total score of 15.42 points. Ceoworld Magazine (2024) uses six main categories, namely innovation, competitiveness, labor skills, infrastructure, access to capital, and business openness to assess and rank the most entrepreneurial countries. In addition, based on a report from the US News and World Report in 2022 Best Countries, Indonesia ranks 42 out of 85 countries surveyed in the entrepreneurship dimension. Indonesia's entrepreneurship ratio in 2022 is 3.47 percent of Indonesia's 276 million population. This number is still very low compared to neighboring countries. Thailand recorded 4.25 percent, Malaysia 4.74 percent, and Singapore 8.76 percent of its entrepreneurs (Ministry of Cooperatives and SMEs, 2022).

The low level of participation of Indonesians in entrepreneurship has an impact on the high unemployment rate. The high unemployment rate is caused by the gap between the expectation of getting a job and the limited number of jobs, so many people, especially vocational school students, have difficulty finding positions in existing vacancies. In addition, the entrepreneurial culture in Indonesia tends to focus on finding a job after graduation rather than starting their own business. This unemployment problem poses a challenge to the government and society as it has the potential to cause other problems such as poverty and social inequality (Wibowo & Sugandi, 2024).

The information presented in Table 1 shows that the highest level of open unemployment is contributed by graduates of Vocational High Schools (SMK). SMK graduates continue to rank highest when compared to

graduates at other educational levels, even though the number appears to be declining annually. Lack of knowledge, skills, and creativity in the workplace, as well as a lack of drive and guts to start their own business and create new jobs, are the main causes of unemployment (Widiyarini, 2018). The younger generation is generally more interested in working as workers than as business owners (Kusnadi et al., 2022).

Table 1. Open Unemployment Rate Based on Education Level

Level of Education	2020	2021	2022
<SD	3.61	3.61	3.59
SMP	6.46	6.45	5.95
SMA	9.86	9.09	8.57
SMK	13.55	11.13	9.42
Diploma	8.08	5.87	4.59
University	7.35	5.98	4.80

Source: (BPS, 2022)

Vocational High Schools (SMKs) are designed by the government to prepare their graduates to face employment challenges. One important aspect that SMK students must possess is the ability to think creatively and innovatively, as stipulated in Permendikbudristek Number 5 of 2022. This implies that students need to be capable of developing new ideas and using and leveraging existing resources effectively. SMK graduates need to be equipped with skills that meet the demands of modern industry and business, and they must be able to continuously develop themselves to adapt to advancements in science, technology, and the arts. Therefore, the necessary step is to optimize the potential of SMK students so that they have the skills and abilities relevant to the development of technology and science.

Law on the National Education System No. 20 of 2003, article 15, stipulates that vocational education is secondary education that prepares students to work in specific fields. The implementation of this law involves the development of vocational education that provides the knowledge, attitudes, and skills necessary for individuals to become skilled, professional, and broad-minded workers capable of keeping up with digital advancements. Vocational education in Vocational High Schools (SMKs) plays an important role in the industrial world by assisting in the development of skills and human resources and meeting workforce needs both regionally and globally. Therefore, SMKs are designed with a learning approach that encompasses theory, techniques, and practices appropriate to the chosen vocational programs.

Another solution implemented by SMKs to reduce the level of open unemployment is the revitalization of SMK graduates developed by the National Professional Certification Agency (BNSP). The government is seriously encouraging the entrepreneurship movement among SMK students, in line with the targets of SMK Revitalization set forth in Presidential Instruction Number 9 of 2016. Through this approach, SMK graduates are not only directed to seek employment but are also given alternative options through the BMW program (working, continuing education, and entrepreneurship). It is anticipated of SMK graduates to be able to grow in their capacity for entrepreneurship, to the point where it is inextricably linked to the skills required in the business sector. The skills that are taught in schools must match the demands of business. The school ecosystem's support is crucial in helping pupils develop an entrepreneurial mindset.

Students' interest in entrepreneurship can be cultivated through entrepreneurship education, which will help to lower unemployment and increase the number of entrepreneurs (Nuraeni et al., 2019). According to (Wu et al., 2022) entrepreneurship education can enhance students' attitudes, knowledge, abilities, and personal traits related to entrepreneurship. Education has the power to mold the attitudes and practices of entrepreneurship (Hasanah et al., 2023). The process of entrep-

reneurship is generated and developed in large part by the cognitive knowledge acquired via schooling (Hapuk et al., 2020), at once to encourage an entrepreneurial attitude. This is because education is provided methodically to maximize students' potential while also being conducted with complete awareness and specific goals, targets, and objectives in mind. According to (Apiatun & Prajanti, 2019), education is the only means of overcoming obstacles or realizing people with entrepreneurial values, attitudes, and abilities. With education, people can eventually stand on their own by developing their self-confidence, ability to make wise judgments, creativity and innovation, morality, character, and intelligence, as well as by improving the quality of other human resources.

In addition, to support the growth of entrepreneurship, it is necessary to create an entrepreneurial ecosystem that supports the emergence and development of entrepreneurs through coaching, funding, and networking (Brooks et al., 2019; Labib & Khalil, 2020; Stam & van de Ven, 2021). It is predicated on the idea that successful entrepreneurs don't suddenly appear out of nowhere; rather, they go through a process and develop successfully in the ecosystem of entrepreneurship to generate successful business actors. This is corroborated by (Alvedalen & Boschma, 2017; Purbasari et al., 2018), which claims that contacts between interested institutions, businesses, and organizations lead to the formation of productive entrepreneurship. Entrepreneurs are the key players in the entrepreneurial ecosystem, serving as leaders, mentors, investors and potential company founders, among other functions (Szerb et al., 2019).

Some research on entrepreneurial ecosystems combined with micro or macro enterprise development (Ali et al., 2019; Gómez et al., 2023; Gupta, 2023). The findings indicate that several factors connected to the entrepreneurial ecosystem promote the emergence of new businesses. Within the entrepreneurial ecosystem, the company creation process is seen to be one way to stimulate interest in starting a business (Sastradinata et al., 2022). New opportunities also arise because they are supported by the ecosystem, which allows them to become more intentional about becoming entrepreneurs (Sulistyowati et al., 2022).

Entrepreneurial readiness refers to an individual's ability and potential for entrepreneurship, of which entrepreneurial intention is a component, and is impacted by a range of external and personal factors (Rakicevic et al., 2022). In this context, entrepreneurial readiness refers to the students' willingness, desire, and capacity to start their own business, contingent on their level of maturity, prior experience, and mental and emotional states. Starting from the position of weak entrepreneurial readiness among students, this study seeks to identify a relationship between entrepreneurship education, entrepreneurial ecosystem and students' entrepreneurial readiness. The results of the study should be taken into account in Vocational High Schools to enhance entrepreneurship education programs and awareness of the entrepreneurial ecosystem.

The goal of Entrepreneurship Education is to impart to students the ideas, knowledge, and abilities required to launch and run a business. A grasp of topics like financial management, marketing, creative problem-solving, company planning, and innovation is part of this. In addition to being taught through materials, entrepreneurship education is also implemented through training exercises and simulations of entrepreneurship. This has an impact on entrepreneurial readiness, which comprises knowledge of opportunities, risk tolerance, and company failure (Wardana et al., 2020). This statement is supported by the results of previous studies which state that entrepreneurship education has a positive and significant relationship with entrepreneurial readiness (Paray & Kumar, 2020; Rakicevic et al., 2022; Azifah & Marlena, 2020; Husain et al., 2024).

Entrepreneurial ecosystem is an accurate construct to support the growth of entrepreneurs (Ali et al., 2019; Gómez et al., 2023;

Gupta, 2023). The contribution of the entrepreneurial ecosystem in developing and maintaining an entrepreneurial environment is necessary because a positive learning environment has a big impact on students' perspectives and can lead to them choosing entrepreneurial careers (Kumar et al., 2020). Research conducted by (Elnadi & Gheith, 2021; Kholid Mawardi, 2020; Sulastri et al., 2020) show that the entrepreneurial ecosystem has a direct impact on entrepreneurial intention, which can enhance an individual's readiness to take part in entrepreneurial activities. There is a correlation between entrepreneurial ecosystems and entrepreneurial readiness, as supported by several empirical data from the findings of these studies.

This study suggest that the entrepreneurial ecosystem plays a mediating role in the relationship between entrepreneurship education and entrepreneurial readiness. In other words, entrepreneurial ecosystem can enhance students' comprehension and implementation of entrepreneurial concepts taught in the classroom, thus helping them to start their businesses better. According to research by Sulistyowati et al. (2022) entrepreneurial ecosystem has a role in mediating the relationship between entrepreneurship education and entrepreneurial readiness.

This article aims to explore the influence of entrepreneurship education and entrepreneurship ecosystem on the entrepreneurial readiness of vocational high school students. To achieve this objective, the research will analyze the extent to which entrepreneurship education and entrepreneurship ecosystem contribute to shaping the attitudes, knowledge, and skills of SMK students for entrepreneurship.

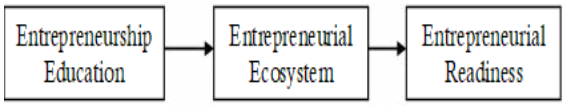

Figure 1. Theoretical Framework

Based on the framework, the formation of this research model is supported by literature studies, with the following hypotheses:
H1: Entrepreneurship Education has a positive effect on Entrepreneurial Readiness
H2: Entrepreneurial Ecosystem has a positive effect on Entrepreneurial Readiness.
H3: Entrepreneurial Ecosystem mediates the impact of Entrepreneurship Education on Entrepreneurial Readiness.

METHODS

This research is a quantitative study using a survey research method. The population in this study were all XII grade students of SMKN Tembilahan, Indragiri Hilir Regency totaling 312 students who had completed entrepreneurship education and industrial work practice. The sampling technique used in this study was a random sampling method. The sample was taken as many as 175 using the Slovin formula.

The scale used in this study to collect data was created by the researcher and consists of entrepreneurship education, entrepreneurial ecosystem, and entrepreneurial readiness. The concept of entrepreneurial readiness is defined as follows (Krueger & Brazeal, 2018): (1) Ability to identify business opportunities and create innovative ideas; (2) Skills to take decisive and manage risks; (3) Capacity to establish connections and look for assistance from resources; and (4 Ability to continuously learn and grow as a person.

The indicators of measuring entrepreneurship education as stated by (Kemendikbud, 2019) include: (1) Creativity and Innovation; (2) Adaptability; (3) Communication Skills; (4) Analytical Thinking Skills; (5) Management Skills; (6) Independence; (7) Business Ethics; (8) Business Skills; (9) Entrepreneurial Skills; and (10) Networking.

Meanwhile, five indicators are used to measure the entrepreneurial ecosystem based on indicators (Spigel, 2017). These indicators are: (1) Culture that supports entrepreneurship; (2) History of knowledge of successful entrepreneurs around; (3) Collaboration with additional parties; (4) Motivation and encou-

ragement of entrepreneurs around; (5) Utilisation of knowledge to start a business; (6) Provision of formal education and training; (7) Availability of knowledge of incubators and places to start a business; and (8) Knowledge of capital from the government.

Content, predictive, and construct validity were used in the validity test. The precision of the measurement and the consistency of the data acquired are assessed using the reliability test. Frequency distribution tables for each variable, as well as both descriptive and inferential statistical analysis, were used to analyze the data for this study. To propose the model and validate the hypotheses, the Structural Equation Model with Partial Least Square Approach (SEM-PLS) was also elaborated in this work utilizing the SEM-PLS 3.0 software. The SEM-PLS phases in this work include the measurement model (outer model), structural model estimate (inner model), model fit testing, and hypothesis testing. They are based on procedures created by (Hair et al., 2013).

RESULT AND DISCUSSION

Outer Model

Before hypothesis testing, collected data were assessed for validity and reliability. The values of Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha are used to measure reliability and validity (Hair et al., 2020). The variables of Entrepreneurship Education (EE), Entrepreneurial Ecosystem (EEco), and Entrepreneurial Readiness (ER) include 32 indicators in this study.

Table 2. Measurement Model

Construct	Item	AVE	Composite Reliability	Cronbach's Alpha	Loading
EE	X1	0.605	0.958	0.953	0.725
	X2				0.716
	X3				0.743
	X4				0.761
	X5				0.721
	X6				0.733
	X7				0.823
	X8				0.841
	X9				0.832
	X10				0.764
	X11				0.796
	X12				0.850
	X13				0.747
	X14				0.808
	X15				0.784

Construct	Item	AVE	Composite Reliability	Cronbach's Alpha	Loading
EEco	M1	0.653	0.944	0.933	0.856
	M2				0.854
	M3				0.789
	M4				0.875
	M5				0.726
	M6				0.761
	M7				0.793
	M8				0.801
	M9				0.806
Y	Y1	0.732	0.956	0.947	0.865
	Y2				0.898
	Y3				0.880
	Y4				0.865
	Y5				0.818
	Y6				0.867
	Y7				0.907
	Y8				0.733

Source: Processed Primary Data (2024)

Based on Table 2, it is known that all indicators for each variable have a loading factor value greater than 0,7, which enables them to be declared valid. Each variable also has an AVE value greater than 0.60, indicating its validity, according to the Average Variance Axtracted (AVE) value (J. F. Hair et al., 2020). Furthermore, Cronbach's alpha (>0.60) and Composite Reliability (>0.70) values demonstrate the reliability of the study variables (J. F. Hair et al., 2020).

Based on the reliability test, all study variables in this study have a Cronbach's Alpha value greater than 0.60: Entrepreneurship Education (0.953), Entrepreneurial Ecosystem (0.933), and Entrepreneurial Readiness (0.947). Furthermore, all variables have Composite Reliability values greater than 0.70: Entrepreneurship Education (0.958), Entrepreneurial Ecosystem (0.944), and Entrepreneurial Readiness (0.956). Therefore, all indicators used in this study were considered reliable to move to the next phase.

Inner Model

The inner model test is carried out to calculate the coefficient of determination (R^2) and hypothesis testing by comparing t-statistical and p-values. The R^2 test is used to measure the extent to which the independent variable can affect the dependent variable. Table 3 shows that the R^2 value for the entrepreneurial ecosystem is 0.824, which means that the entrepreneurship education variable can explain the entrepreneurial ecosystem by 82.4%. According to (Chin, 1998), this indicates that the model is robust or strong. With a R^2 value of 0,825 for entrepreneurial readiness, the entrepreneurship education and entrepreneurial ecosystem can explain entrepreneurial readiness by 82.5% (strong model).

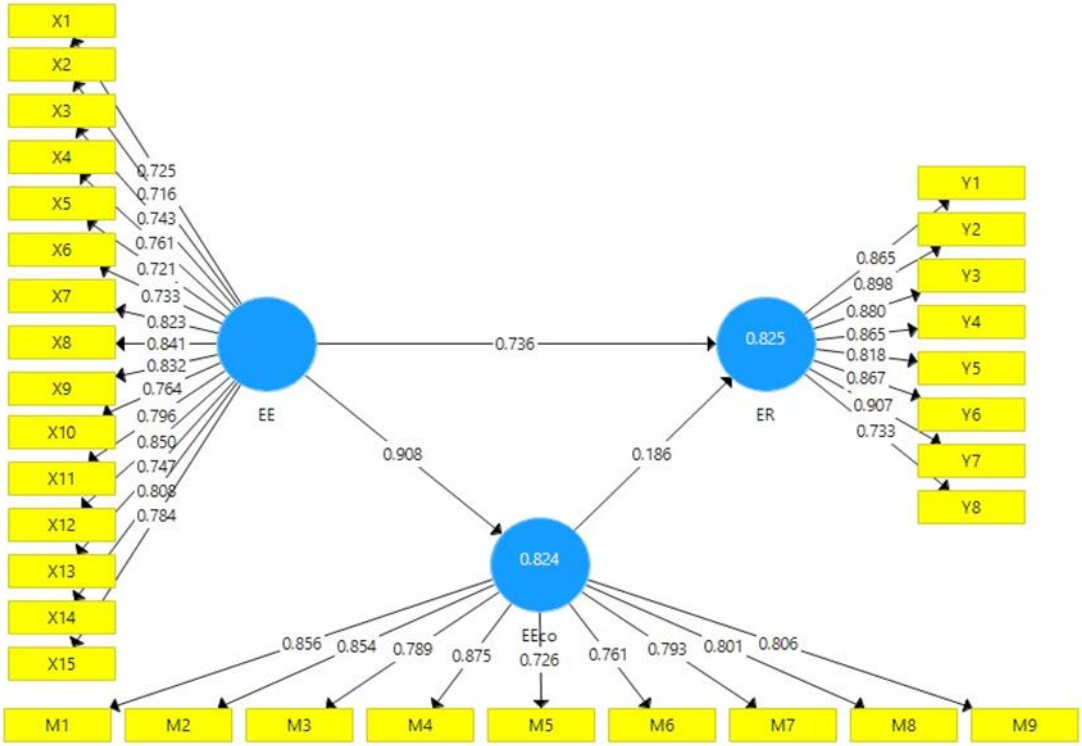

Figure 1. Loading Factors

Table 3. Determination Coefficient

Variabel	R Square
EEco	0.824
ER	0.825

Source: Processed Primary Data (2024)

Table 4. F-Square Test

Variabels	EEco	ER
EE	4.675	0.545
EEco		0.035

Source: Processed Primary Data (2024)

Furthermore, this study uses (Hair et al., 2017) rule of tumb to avaluate the effect size or influence (f^2). According to (Hair et al., 2017), f2 values of 0.02, 0.15, and 0.35 respectively, represent small, medium, and large effects. Exogenous constructs have no effect on variance in endogenous constructs, if the f2 value is less than 0.02. The impact of the entrepreneurial ecosystem on entrepreneurial readiness is 0.035, as seen in Table 4, indicating a small effect. However, the effect of entrepreneurship education on the entrepreneurial ecosystem has a value of 4.675, indicating a significant impact. Then, the effect of entrepreneurship education on entrepreneurial interest has a considerable influence (f-value = 0.545).

The Goodness of Fit (GoF) test is used to evaluate and determine how well the structural model being tested fits the data. (Hu & Bentler, 1999) state the acceptable range of the SRMR index is 0 to 0.08. Meanwhile, NFI generates values between 0 to 1 (Bentler & Bonett, 1980). Table 5 provides information about the SRMR value, which is 0.068 and suggests a good degree of model fit. Additionally, the model's level of fit with the data is sufficient, as indicated by the NFI value of 0.635, which is quite near to 1.

Tabel 5. Fit Model

	Saturated Model
SRMR	0.068
NFI	0.635

Source: Processed Primary Data (2024)

Testing the Hypothesis

Table 6 illustrates the hypothesis testing process. A hypothesis will be accepted if the significance test has a value of 0.05. The requirements met in conducting the test are the t-statistic value> 1.96 and the p-value <0.05 to be said to be significant or accepted. Table 3 also describes the potential of entrepreneurial ecosystem in mediating entrepreneurship education and entrepreneurial readiness.

Tabel 6. Direct and Indirect Effect

Direct Effect	T Statistics	P Values
EE -> ER	6.633	0.000
EE -> EEco	58.066	0.000
EEco -> ER	1.603	0.110
Indirect Effect		
EE -> EEco -> ER	1.612	0.108

Source: Processed Primary Data (2024)

The data analysis's findings demonstrate that entrepreneurial preparedness is influenced by entrepreneurship education with a p-value <0.05 (0.000 <0.05). This suggests that entrepreneurial readiness is positively and significantly impacted by entrepreneurship education. This means that the higher the level of entrepreneurship education an individual receives, the more prepared and confident they will be in managing a business. As their knowledge and skills increase, they become better equipped to face challenges, make informed decisions, and drive their business toward success. Thus, investing in entrepreneurship education is a key factor in enhancing an entrepreneur's ability to sustain and grow their business. Previous studies have demonstrated that entrepreneurship education prepares people for entrepreneurship (Azifah & Marlena, 2020; Husain et al., 2024; Olugbola, 2017; Rakicevic et al., 2022). Entrepreneurship education is an important determinant of entrepreneurial readiness. Students who have received entrepreneurship education have a higher entrepreneurial readiness and they express higher intent, ability, and interest in entrepreneurship (Rakicevic et al., 2022).

Examining the second hypothesis, the entrepreneurial ecosystem affects entrepreneurial readiness with p-value > 0.05 (0.110 > 0.05). This result suggests that entrepreneurial readiness is not positively and significantly impacted by the entrepreneurial ecosystem. Although such factors in the ecosystem are important, they may not directly enhance individuals' readiness for entrepreneurship as effectively as other factors such as entrepreneurship education. In other words, while an entrepreneurship-supportive environment and ecosystem resources such as incubators, formal training, and capital support may provide benefits, increased entrepreneurial readiness may be more influenced by other factors that directly develop individuals' skills and knowledge. Therefore, to significantly increase entrepreneurial readiness, there needs to be an additional focus on education and training programs specifically designed to hone entrepreneurs' capabilities and readiness. The results of this study are supported by previous research by (Kumar et al., 2020) which demonstrates that the entrepreneurial ecosystem doesn't support entrepreneurial readiness. This indicates that universities do not have the right infrastructure to create entrepreneurial interest among students. Prior studies have highlighted the significance of the entrepreneurial ecosystem in enhancing individuals' behavior and making them create new businesses (Morris et al., 2013). Schools should improve their facilities and cultivate the skills needed to create more entrepreneurs in their learning environment.

Furthermore, according to the testing of the third hypothesis, a p-value> 0.05 (0.108> 0.05) indicates that the entrepreneurial ecosystem doesn't moderate the effect of entrepreneurship education on entrepreneurial readiness. Although entrepreneurship education and entrepreneurial ecosystem both have important roles, entrepreneurial ecosystem does not mediate the relationship between entrepreneurship education and entrepreneurial rea-

diness. In other words, the positive impact of entrepreneurship education on entrepreneurial readiness is not influenced by the presence or quality of the entrepreneurial ecosystem. This suggests that entrepreneurship education directly contributes to entrepreneurial readiness without the need to go through the influence of the entrepreneurial ecosystem. Therefore, strategies to improve entrepreneurial readiness should focus more on strengthening aspects of entrepreneurship education itself, such as curriculum, training, and practical skills development, rather than relying on the development of the entrepreneurial ecosystem as a mediator.

The result of this study differs from earlier studies (Sulistyowati et al., 2022) that support entrepreneurial ecosystem mediates the link between entrepreneurship education and entrepreneurial readiness. To better prepare students for entrepreneurship, these findings emphasize how crucial it is to develop or enhance the entrepreneurial ecosystem in the school environment. Improved facilities, access to resources and support from the entrepreneurial community can create an environment that is more conducive to the development of entrepreneurial skills. Although the entrepreneurial ecosystem was not shown to mediate the relationship in this study, efforts to strengthen the ecosystem are still important as part of a holistic strategy to facilitate entrepreneurial readiness.

CONCLUSION

Based on the results of the research and the discussion that has been described, it can be concluded that: (1) entrepreneurship education has a positive and significant impact on entrepreneurial readiness; (2) Entrepreneurial ecosystem has no effect on entrepreneurial readiness: and (3) The mediation test results confirm that the entrepreneurial ecosystem doesn't mediate the effect of entrepreneurship education on entrepreneurial readiness.

With this research, it can be proven that entrepreneurship education directly improves students' entrepreneurial readiness. Therefore, educational institutions should pay more attention to the development of a comprehensive entrepreneurship education curriculum and program to facilitate entrepreneurial readiness. Although the entrepreneurial ecosystem was not shown to mediate this relationship, the development of a supportive ecosystem remains important to create a conducive environment for overall entrepreneurship development.

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