



Research article

The impact of entrepreneurship education and students' entrepreneurial mindset: the mediating role of attitude and self-efficacy



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ABSTRACT

The main purpose of this study is to investigate the relationship between students' entrepreneurship education and entrepreneurial mindset as well as understanding the mediating role of attitude and self-efficacy. The approach adopted in this study is a convenience random sampling method, which is widely used in entrepreneurship research. Participants were recruited from several universities in Malang of East Java in Indonesia undergoing an online survey and were calculated using structural equation modeling (SEM). The findings of this current study indicate that entrepreneurship education successfully influences entrepreneurial self-efficacy, entrepreneurial attitude, and the entrepreneurial mindset. On the other hand, entrepreneurial self-efficacy promotes entrepreneurial attitude instead of the entrepreneurial mindset. Furthermore, entrepreneurial attitude plays an essential role in mediating both entrepreneurship education and self-efficacy toward students' entrepreneurial mindset.

1. Introduction

An entrepreneurial mindset has been acknowledged in providing success and failure among entrepreneurs (Belousova et al., 2020; Aima et al., 2020). Inevitable scholars underlie the entrepreneurial mindset as a considerable variables in entrepreneurship studies (Allen, 2020; Ajor and Alikor, 2020; Kouakou et al., 2019; Schaefer and Minello, 2019). In particular, Cui et al. (2019) noted that the entrepreneurial mindset is linked with more profound cognitive phenomena that reflect the unique engagement of entrepreneurial activities. In addition, the foundation of entrepreneurial intention reclines cognitive adaptability (Haynie et al., 2010), which plays a crucial role in accomplishing desirable outcomes following entrepreneurial action.

In some developing countries, the lack of success in running a business can be explained by entrepreneurial mindset (Cummings et al., 2019; Sihotang et al., 2020; Kawulur et al., 2019; Pfeifer et al., 2016; Piperopoulos and Dimov, 2015). Therefore, to foster a mindset for business startups, there are several supporting dimensions which include

entrepreneurial education (Lindberg et al., 2017; Solesvik et al., 2013), attitudes towards entrepreneurship (Ayalew and Zeleke, 2018; Sowmya et al., 2010) and self-efficacy (Aima et al., 2020; Pfeifer et al., 2016). The theory of social cognitive proposed by Bandura (2012) demonstrated that entrepreneurship education enhances an individual self-efficacy. First, entrepreneurship education allows students to have an opportunity in entrepreneurship tasks such as analyzing business feasibility, writing a business plan, performing their business plan. Furthermore, entrepreneurial education presents a social coercion through response from peers in class discussions and performance on course assignments.

In acquaintance with entrepreneurship study, an entrepreneurial attitude has highlighted among scholars as a determinant variable. The term entrepreneurial attitude is defined as an individual response of information, events, and critics toward the existing opportunities. Ajzen (2002) have provided several categories of entrepreneurial attitude: the need for attainment, personal behavior control, innovation, and self-esteem. Additionally, those scholars measure each entrepreneurial attitude in several aspects, including (feelings and emotions), cognition

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(thoughts and beliefs), and conation (actions and behaviors). Therefore, a significant component of entrepreneurship education on attitudes is cognitive, affective, psychomotor (Ayalew and Zeleke, 2018; Botsaris and Vamvaka, 2016; Jena, 2020; Mahendra et al., 2017; Denanyoh et al., 2015).

Since some consensus believe that the crucial role of the cognitive process, scholars involve this matter on entrepreneurship research (Bandura, 2001; Krueger, 2003). For example, Krueger (2003) argued that the understanding of entrepreneurship is important, especially on how to start, manage, and evolve the business. Additionally, some scholars believe that perceived self-efficacy on an individual's behavior and attitude will lead to a greater cognitive (Pihie and Bagheri, 2010). Bandura (1986) pointed out that self-efficacy as a social-cognitive process can explain the causality between cognitive and individuals in the form of entrepreneurial attitude.

Entrepreneurial mindset and attitudes on entrepreneurship have dual variables, including personal background and environment. Davis et al. (2016); Jabeen et al. (2017) remarked a bi-causality between attitude and entrepreneurial mindset. The relationship between those variables is symbolized as an entrepreneurial image (Commarmond, 2017; Jena, 2020; Mahendra et al., 2017; Ndou et al., 2018). The proposed model of this study measures the entrepreneurial attitude towards the entrepreneur mindset, while the entrepreneurial image is obtained only by the interpretation of these two variables. In feeling a positive image of entrepreneurship is achieved when respondents are prepared to stop entrepreneurial opportunities, which are generally considered appropriate and desirable. Students have an obligation to develop their mindset so that their business can survive and grow. Five concepts of mindset that must be possessed to be an entrepreneur include a dare to take risks, look for new opportunities, action-oriented, continuous learning, and big vision (Botsaris and Vamvaka, 2016; Davis et al., 2015; Magdaraog, 2015).

The contributions of this present study are three folds. First, it provides an insight into the existing literature on the entrepreneurship study by engaging entrepreneurial attitude and entrepreneurial mindset, which is missing in the prior studies. Despite the heightening studies on entrepreneurship study, however, the lack of study into an entrepreneurial mindset has been recently highlighted (Cui et al., 2019). Second, the study of entrepreneurship education, self-efficacy, and entrepreneurial mindset in different areas are examined in Malaysia (Pihie and Bagheri, 2013), Africa (Puni et al., 2018), India (Jena, 2020), while little attention scholars in the context of Indonesia. A prior study by Mahendra et al. (2017) concerned with entrepreneurial motivation and attitude, whilst Sihotang et al. (2020) focused on women entrepreneurship. Since the preliminary theory of self-efficacy by Bandura (1977), this variable is widely considered in social psychological research. Some researchers have observed the mediating role of self-efficacy. For instance, Zhao et al. (2005) were the first scholar who examined the chain of causality with a focused on entrepreneurial self-efficacy and provided a discussing the mediation effect of self-efficacy and entrepreneurial mindset. For this reason, the last contribution of this study attempts to investigate the crucial role of entrepreneurial attitude and self-efficacy in explaining students' entrepreneurial mindset, which eventually leads to students in setting new ventures.

2. Theoretical review

2.1. Entrepreneurship education

Entrepreneurial education is a learning activity that discusses the enhancement of knowledge, skills, attitudes, and personal character related to entrepreneurship (Hussain and Norashidah, 2015). Indeed, it is also narrated by Kirkwood et al. (2014) as the ability to reflect one's actions in support of learning. In this study, we use student reflection about their entrepreneurial learning as our data collection to understand

entrepreneurial education. Entrepreneurship, like other disciplines, can be learned and developed in which activities that discuss and learn about entrepreneurship are published advancement knowledge, skills, attitudes, and characters that support the students' success.

The gesticulation of education approach from teacher-centered to learner-centered education enables students to enhance their critical thinking on entrepreneurship (Commarmond, 2017). Students can also recognize the primary essential teaching approach after taking entrepreneurship courses, including providing a business practice, visiting company, interviewing a successful entrepreneur. This teaching technique, which applied contextual learning and providing a real experience instead of a theory, is considered as the most essential in enhancing their entrepreneurship and entrepreneurial skills (Farny et al., 2016; Potishuk and Kratzer, 2017).

Entrepreneurship education at the university level should consider the appropriate teaching approach, which allows students to obtain first-hand experience about business together with practice. This entrepreneurial approach can improve students' entrepreneurial mindset (Ndou et al., 2018; Cui et al., 2019). By paying attention to the curriculum and techniques of teaching practical entrepreneurship courses to these students will form an even better entrepreneurial mindset. Bringing up these theories, numerous prior researchers have proposed on the nexus between entrepreneurship education, perception of self-efficacy and entrepreneurial attitude (Abaho, 2017; Hassi, 2016; Lackeus, 2014; Lindberg et al., 2017; Pfeifer et al., 2016; Piperopoulos and Dimov, 2015; Denanyoh et al., 2015).

- H1. Entrepreneurial education positively influences self-efficacy**
- H2. Entrepreneurial education positively influences entrepreneurial attitude**
- H5. Entrepreneurial education influences entrepreneurial mindset**

2.2. Entrepreneurial self-efficacy

Since the escalating study of the importance of cognition, some scholars have highlighted the role of self-efficacy as a variable in affecting individual behavior (Pihie and Bagheri, 2010). The concept of self-efficacy is constructed from the social cognitive theory by Bandura (1977) and developed by Bandura (2012), which demonstrated that individual behavior is devised by several activities, such as the interaction of intrapersonal, individuals involvement, and the circumstance. Interactions between these matters can shape an individual's belief in encompassing the ability to conduct certain behaviors in certain situations and their expectations of behavioral outcomes (Pihie and Bagheri, 2013). The point is that self-efficacy, which is determined as a social-cognitive process, can explain the impact of individuals' knowledge and action in the form of attitude toward entrepreneurship.

Self-efficacy greatly affects the selection of human action regardless of the existence of alternatives, the amount of effort they spend to carry out the action, their perseverance in facing obstacles, and opportunities in taking action (Pihie and Bagheri, 2013; Shane, 2004). Similarly, Bandura (2012) argued that self-efficacy is the essential factor that influences behavior through the process, goal setting, outcome expectations, and challenges in the circumstances. The underlying impact of entrepreneurial self-efficacy on individuals' behavior has driven researchers to examine the concept in the entrepreneurship subject (Piperopoulos and Dimov, 2015; Zhao et al., 2005).

- H3: Entrepreneurial self-efficacy positively influences entrepreneurial attitude**
- H4: Entrepreneurial attitude positively influences entrepreneurial mindset**
- H6: Entrepreneurial self efficacy positively influences entrepreneurial mindset**

2.3. The mediation role of entrepreneurial attitude and self-efficacy

The concept of mindset originates from the field of cognitive psychology. This mindset is influenced and studied by the knowledge of individuals who interact with the current environment (Mathisen and Arnulf, 2012). Rita et al. (2000) stated that the entrepreneur mindset is the aptitude to feel, act, and motivate despite very uncertain situations. The enhancement of the mindsets is acquaintance with entrepreneurship education, which supports the proposed hypothesis. Prior studies have demonstrated the role of mediating self-efficacy (Luthans and Ibrayeva, 2006). Additionally, Zhao et al. (2005) were among the first scholar who provided the chain of entrepreneurial self-efficacy and providing a discussion of a mediation role of self-efficacy toward entrepreneurial mindset. Additionally, a prior study believes that entrepreneurial self-efficacy can explain the relationship between perceived formal education, entrepreneurial experience, and entrepreneurial mindset (Burette et al., 2020).

H7. Entrepreneurial education indirectly influences entrepreneurial mindset toward entrepreneurial attitude

H8. Entrepreneurial self-efficacy indirectly influences entrepreneurial mindset toward entrepreneurial attitude

3. Materials and method

This study used a quantitative research method to acquire a detailed understanding of how entrepreneurial education can affect entrepreneurial mindset as well as understanding the mediating role of entrepreneurial attitude and entrepreneurial self-efficacy (see Figure 1). The approach adopted in this study is a convenience random sampling method, which widely used in entrepreneurship research. In total, approximately 390 students have participated in this quantitative research. After the validation process, we found that about 14 questionnaires were provided incompletely. However, 376 questionnaires proved useful for further analysis. Participants were recruited from several universities in Malang of East Java in Indonesia undergoing an online survey. Ethical approval was conducted from the Institutional Research Committee of Universitas Negeri Malang for all aspects of this research. In more detail, it consisted of two students in the five-year study, about eight students in the fourth-year study, and approximately a hundred participants of the third-year study. Additionally, it also involved students in the first-year and second-year study by approximately 2.6 percent and 2.4 percent, respectively. The demographics respondents were dominated by women instead of men with the percentage of 65 percent and 35 percent, respectively. The respondents came from the various subject studies, including economics, social sciences and humanities, sciences and engineering.

The first couple of questions were designed to understand students' entrepreneurship education by adapting six indicators from Denanyoh et al. (2015). Meanwhile, to measure entrepreneurial self-efficacy, we adapted four indicators from Zhao et al. (2005). In addition, the entrepreneurial attitude was explained by five indicators by Liñán and Chen

(2009). Lastly, to understand the entrepreneurial mindset, researchers applied seven items from Mathisen and Arnulf (2013). Participants were asked to respond using a 5-point Likert scale ranging from 1, indicating "strongly disagree" to 5 indicating "strongly agree".

The analysis data of this study was conducted in two folds: exploratory factor analysis and confirmatory factor analysis. The first analysis is aimed at validating, exploration data, maintaining indicators, and continuing a reliability test using SPSS (version 25) (Allen and Bennett, 2010). The construct variable used in this study followed the criteria from Hair et al. (2006), with the Cronbach alpha score of 0.6 and higher. The further test was the confirmatory factor analysis which calculated undergoing AMOS software (version 25). To achieve a fit model, this research adopted criteria and cut-off values from Schermelleh-Engel et al. (2003) (probability) $p > 0.5$, CMIN/DF of < 2 (Tabachnick and Fidell, 2007), and RMSEA of ≤ 0.06 (Hu and Bentler, 1999).

4. Results and discussion

4.1. Exploratory factor analysis

Table 1 provides the result of the exploratory factor analysis of the variables studied. From the analysis, it can be seen that, in general, there are 14 factors, including entrepreneurship education (3), entrepreneurial self-efficacy (3), entrepreneurial attitude (4), and entrepreneurial mindset (4). Also, it can be known that all variables has Cronbach's alpha score which ranging from 0.599 to 0.975, and it can be concluded reliable for the next analysis.

4.2. Hypotheses testing

Based on the Structural Equation Modeling (SEM) calculations, a fitting model was calculated with a probability value of 0.095, a CMIN/DF score of 1233, a CFI score of 0.996, and an RMSEA score of 0.025. As illustrated in Table 2, it can be known that H₁, H₃, H₄, H₅, H₇ and H₈ are categorized significant with C.R scores of 10.670, 8.596, 4.402, 3.837, 2.380, 3.380, 3.918, and 0.466, respectively. This score indicates significance (Hair et al., 2020). In contrast, H₂ and H₆ were not significant with C.R scores of 2.830 and 1.875 (See Table 2 and Figure 2).

5. Discussion

This study addressed eight hypotheses proposed through structural equation modeling. It is interesting to note that this study confirms seventh hypotheses proposed and rejects one hypothesis. In more detail, the first hypothesis of this study indicates that entrepreneurship education positively affects entrepreneurial self-efficacy. The finding of this research is in agreement with antecedent studies by Ao and Liu (2014); Küttim et al. (2014); Mahendra et al. (2017); Godwin et al. (2016); Neck and Greene (2011); Opoku-antwi (2012); Denanyoh et al. (2015); Pihie and Bagheri (2013); Shane (2004); Bandura (2012); Piperopoulos and Dimov (2015); Wolters et al. (1996); Zhao et al. (2005). The university provides knowledge about entrepreneurship that makes students capable and experts in business subject. The enhancement of this entrepreneurship education model is supported by a curriculum that has been prepared. This condition will bring to an entrepreneurial atmosphere in the universities and lead to entrepreneurial self-efficacy. The increase is proven by students' ability to identify business opportunities or new ventures. They have also been able to think more creatively and are able to commercialize new ideas in the form of product development. Lastly, the use of the internet by utilizing YouTube tutorials and e-commerce networks will enhance students' entrepreneurial self-efficacy.

The second hypothesis is mentioned that is a positive impact between entrepreneurship education and attitudes toward entrepreneurship. This finding supports numerous study by Ao and Liu (2014); Küttim et al. (2014); Mahendra et al. (2017); Godwin et al. (2016); Neck and Greene (2011); Opoku-antwi (2012); Denanyoh et al. (2015); Elfving (2008);

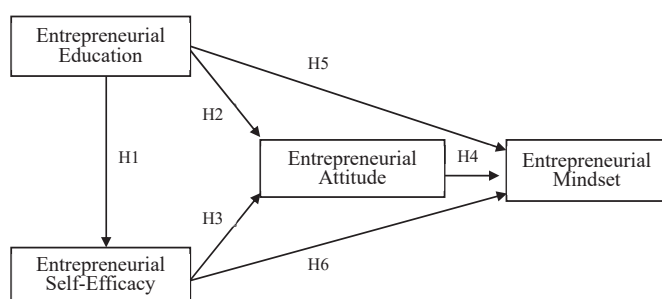


Figure 1. The theoretical framework.

Table 1. The summary of exploratory factor analysis test.

	Variable	Loading Factor
1	Entrepreneurial Education	$\alpha = 0.943$
ee3	The university develops entrepreneurial skills	0.915
ee2	The university presents the substantial knowledge on entrepreneurship	0.912
ee1	Learning approach and university' curricula enhances me to provide creative ideas of being an entrepreneur	0.889
2	Entrepreneurial Self-Efficacy	$\alpha = 0.943$
ese3	I could think creatively	0.900
ese4	I have an ability to commercialize new ideas	0.893
ese1	I have an ability to identify business opportunities	0.861
3	Entrepreneurial Attitude	$\alpha = 0.927$
eta1	Career choice as an entrepreneur is interesting for me	0.894
eta2	Among the numerous choices, I would rather being an entrepreneur	0.901
eta3	Being an entrepreneur will give me extraordinary satisfaction	0.936
eta5	If I have opportunities and resources, I would like to start a business	0.832
4	Entrepreneurial Mindset	$\alpha = 0.834$
em2	I consider whether there is time to be involved in entrepreneurial activities	0.809
em4	I look for information on the advantages and disadvantages of engaging in entrepreneurial activities	0.763
em1	I consider the positive and negative perspectives of engaging in entrepreneurial activities	0.721
em6	I consider whether I want to be involved in entrepreneurial activities	0.670

Table 2. Theoretical Framework Testing.

				C.R	P	Result
H1	Entrepreneurial education	→	Entrepreneurial self-efficacy	10.670	***	Significant
H2	Entrepreneurial education	→	Entrepreneurial attitude	2.830	0.005	Significant
H3	Entrepreneurial self-efficacy	→	Entrepreneurial attitude	8.596	***	Significant
H4	Entrepreneurial Attitude	→	Entrepreneurial mindset	4.402	***	Significant
H5	Entrepreneurial education	→	Entrepreneurial mindset	3.837	***	Significant
H6	Entrepreneurial self-efficacy	→	Entrepreneurial mindset	1.875	0.061	Insignificant
H7	Indirect effect entrepreneurial education	→	Entrepreneurial mindset	2.380		Significant
H8	Indirect effect entrepreneurial self-efficacy	→	Entrepreneurial mindset	3.918		Significant

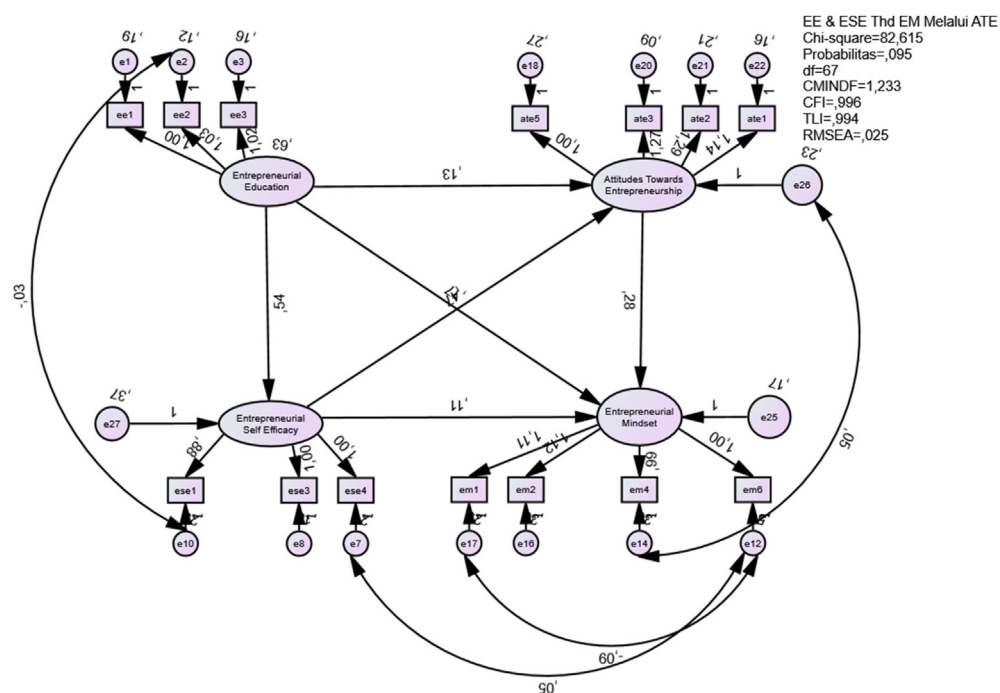


Figure 2. The result of structural equation model.

Díaz-García and Jiménez-Moreno (2010); Guerrero et al. (2008); Liñán et al. (2011); Ajzen and Fishbein (1997); Eagly and Chaiken (1993); Fini et al. (2012); Botsaris and Vamvaka (2016); Mahendra et al. (2017); Pihie and Bagheri (2013). The fundamental reason is that the university support in developing expertise in entrepreneurship that is sufficiently utilized by students. This result is logical due to a number of previous studies mentioned that entrepreneurship education can image the students' mindset, attitudes, and behavior of being entrepreneurs and drive them to choose a career as an entrepreneur. Moreover, entrepreneurship education allows students to have both a theoretical foundation on the concept of entrepreneurship and attitudes, behaviors, and mindset of being an entrepreneur. This is an investment in human capital to prepare students to start a new business through experience integration, skills advancement, and knowledge, which essential to developing and expanding a business.

Third, this present finding seems to be consistent, which remarked that a positive correlation between entrepreneurial self-efficacy and entrepreneurial attitude. This result agrees with inevitable previous studies by Pihie and Bagheri (2013); Shane (2004); Bandura (2012); Piperopoulos and Dimov (2015); Wolters et al. (1996); Zhao et al. (2005); Elfving (2008); Ajzen (1991); Díaz-García and Jiménez-Moreno (2010); Guerrero et al. (2008); Liñán et al. (2011); Ajzen and Fishbein (1997); Eagly and Chaiken (1993); Fini et al. (2012); Botsaris and Vamvaka (2016); Mahendra et al. (2017); Pihie and Bagheri (2013). In this study, students have started to having a competency to identify business opportunities by engaging in an online shop that is currently more familiar with using all e-commerce facilities. By following these conditions, they think creatively and learn to increase their ability to commercialize new ideas and modify products currently trending and have good market opportunities. Students are starting to be interested in choosing careers to become entrepreneurs because of the several choices available. It is reasonable because students are more satisfied since they have been able to be independent without relying on a company that is only an employee. Students also hope they can employ human resources or other resources in starting entrepreneurship.

Fourth, the result additionally revealed that entrepreneurial attitude positively impacts entrepreneurial mindset. These results corroborate the findings of a great deal of the previous work by Elfving (2008); Ajzen (1991); Díaz-García and Jiménez-Moreno (2010); Guerrero et al. (2008); Liñán et al. (2011); Ajzen and Fishbein (1997); Eagly and Chaiken (1993); Fini et al. (2012); Botsaris and Vamvaka (2016); Mahendra et al. (2017); Pihie and Bagheri (2013); Mathisen and Arnulf (2012); Rita et al. (2000); Shepherd et al. (2010); McMullen and Kier (2016); Schmidt and Ford (2003); Cui et al. (2019); Haynie et al. (2010); Kouakou et al. (2019). Students choose an entrepreneur as the first career because they will be more satisfied by being able to choose the opportunities that exist. They feel happy when they can empower all aspects of resources, which is realized by starting to learn entrepreneurship in practical ways. This shows that the current entrepreneurial mindset of students has considered the positive and negative aspects of engaging in entrepreneurship. This consideration is because they still have less time to be able to practice entrepreneurial activities. With the better ability of students in Information Technology and the knowledge, they get in entrepreneurship courses. Therefore, they are easier to find information on the advantages and disadvantages of doing business activities. Moreover, with the online shop technology facility, the involvement of students is more practical in running their business that is not limited by time and space.

Fifth, the study indicated that entrepreneurship education influences on the entrepreneurial mindset. This corroborates with the previous entrepreneurship literature by Küttim et al. (2014); Mahendra et al. (2017); Godwin et al. (2016); Neck and Greene (2011); Opoku-antwi (2012); Denanyoh et al. (2015); Mathisen and Arnulf (2012); Rita et al. (2000); Shepherd et al. (2010); McMullen and Kier (2016); Schmidt and Ford (2003); Cui et al. (2019); Haynie et al. (2010); Kouakou et al. (2019). By conducting an Entrepreneurial Education conditioning at the university for entrepreneurship courses that have applied to learn

theoretically and practically. At present, the university has developed creative ideas and the development of knowledge about entrepreneurship to improve entrepreneurial skills. This has a positive impact on the entrepreneurial mindset of students who currently have been able to make consideration of both positive and negative aspects of business activities. Students also choose to do business because they have time available in entrepreneurial activities. With the support of the growing development of technology information, they have monitored the advantages and disadvantages of their business.

This sixth hypothesis in this study sought to determine the impact of entrepreneurial self-efficacy and entrepreneurial mindset. However, the finding showed that entrepreneurial self-efficacy unsuccessful in affecting students' entrepreneurial mindset. The result of the present study has been unable to explain the relationship between variables. This findings is in contrast with the major research by Pihie and Bagheri (2013); Shane (2004); Bandura (2012); Piperopoulos and Dimov (2015); Wolters et al. (1996); Zhao et al. (2005); Mathisen and Arnulf (2012); Rita et al. (2000); Shepherd et al. (2010); McMullen and Kier (2016); Schmidt and Ford (2003); Cui et al. (2019); Haynie et al. (2010); Kouakou et al. (2019). A possible explanation for this result is that the students may partly explain that these relationships were unable to create original new products instead of developing existing products. This is due to the fact that students are still constrained by financial resources and have not been able to create new business ideas where they are still unable to carefully consider the chosen business choices that are in accordance with their competencies. They still have an Entrepreneurial Mindset that still needs to be developed further by providing more comprehensive training.

Seventh, this study found that entrepreneurial attitude mediates entrepreneurial education and students' mindset. This finding broadly supports the work of other studies by Godwin et al. (2016); Neck and Greene (2011); Opoku-antwi (2012); Denanyoh et al. (2015); Ajzen (1991); Díaz-García and Jiménez-Moreno (2010); Guerrero et al. (2008); Liñán et al. (2011); Mathisen and Arnulf (2012); Rita et al. (2000); Shepherd et al. (2010); McMullen and Kier (2016); Schmidt and Ford (2003). This outcome implies that currently, students do business with the provision of entrepreneurial education carried out at universities in the form of education and training. Therefore, this has the impact of entrepreneurial mindset students become a person who has an entrepreneurial mindset: alertness to opportunities, risk tendencies, tolerance for ambiguity, and optimism in doing business. With entrepreneurial education, it can form an entrepreneurial attitude and form a better Entrepreneurial Mindset.

Lastly, the result of this study showed that an indirect positive impact between entrepreneurial self-efficacy and entrepreneurial mindset through entrepreneurial attitude. This finding is in accord with recent studies by Pihie and Bagheri (2013); Shane (2004); Bandura (2012); Piperopoulos and Dimov (2015); Wolters et al. (1996); Eagly and Chaiken (1993); Fini et al. (2012); Botsaris and Vamvaka (2016); Mahendra et al. (2017); Pihie and Bagheri (2013); Cui et al. (2019); Haynie et al. (2010); Kouakou et al. (2019). In conditions with Entrepreneurial Self Efficacy owned by students, making students have reasonably good entrepreneurship attitudes. This will directly impact the formation of an entrepreneurial mindset from better students.

6. Conclusion and recommendation

This study is aimed at investigating the impact of entrepreneurial education toward an entrepreneurial mindset as well as understanding the mediating role of self-efficacy and attitude. From this study, it can be confirmed that entrepreneurship education can influence entrepreneurial self-efficacy, entrepreneurial attitude and entrepreneurial mindset. On the other hand, entrepreneurial self-efficacy successfully impacts entrepreneurial attitude instead of the entrepreneurial mindset. Also, the entrepreneurial attitude positively affects students' entrepreneurial mindset. Furthermore, entrepreneurial attitude plays a vital role in

mediating both entrepreneurship education and entrepreneurial self-efficacy to students' entrepreneurial mindset.

These findings suggest that, first, the university needs to change the curriculum of entrepreneurship courses by bringing practitioners as instructors, conducting fieldwork with more compositions than theories in the classroom. Second, the university provides assistance to students in making new products by facilitating several supporting activities, including business capital, in financial matters. Furthermore, the need for attitudes towards entrepreneurship students in their business is expected to create a more profitable business financial condition by making efficiency in several production aspects while still producing the best quality products. Lastly, the university makes support to students in forming an entrepreneurial mindset. Although data were collected in several state universities, the findings cannot be generalized to represent real conditions in all the university students. Future research needs to involve public and private universities in Indonesia so that research results are more diverse and generalizable.

Declarations

Author contribution statement

L. W. Wardana: Conceived and designed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

B. S. Narmaditya: Conceived and designed the experiments; Wrote the paper.

A. Wibowo: Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

A. M. Mahendra: Conceived and designed the experiments; Analyzed and interpreted the data.

N. A. Wibowo, G. Harwida: Performed the experiments; Contributed reagents, materials, analysis tools or data.

A. N. Rohman: Analyzed and interpreted the data.

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Competing interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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