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Investigating the Influence of Entrepreneurial Leadership on Students' Entrepreneurial Intentions: Teacherpreneurship as a Mediating Variable

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Abstract: The paper aims to know the influence of entrepreneurial leadership on the students' entrepreneurial intentions as well as its impact on teacherpreneurship. The design employed was quantitative with the ex post facto method using Partial Least Square Structural Equation Modelling (PLS-SEM) to test the hypothesis. The samples were taken using a stratified random sampling technique, obtaining 70 teachers and 285 students as the respondents. The data were gathered through a questionnaire, which has been tested for validity and reliability. The validity and reliability tests of each variable show the Cronbach's Alpha value, and the Composite Reliability is higher than 0.6 (the minimum standard), while the average variance extracted (AVE) value is higher than 0.50 (the minimum standard for validity). The hypothesis tested using the path coefficient is accepted if the t-statistic is above 1.96 and p-value less than 0.05. The results of the path coefficient and indirect effect are above 1.96 and below 0.05 for the t-statistic and p-value, respectively. Therefore, the three hypotheses are accepted. First, entrepreneurial leadership has a positive and direct significant influence on teacherpreneur, with a t-statistic value of 18.057 and a p-value 0.000. Second, similarly, the teacherpreneur positively and significantly influences students' entrepreneurial intentions, with a t-statistic value of 3.558 and a p-value 0.000. Third, entrepreneurial leadership has an indirect influence on entrepreneurial intentions, mediated by teacherpreneur. In other words, teacherpreneur mediated the influence of entrepreneurial leadership on entrepreneurial intentions, with a t-statistic value of 3.282 and p-value 0.0001. The findings recommend the importance of entrepreneurial leadership and teacherpreneur in establishing the students' entrepreneurial intentions.

Keywords: *Entrepreneurial leadership, teacherpreneurship, entrepreneurial intentions.*

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Introduction

Industry 4.0 requires the development of human resources, encouraging them to think critically and to be creative, innovative, communicative, and collaborative to face the challenges of the 21st century. One of the ways is to instill entrepreneurship values to the students, providing them with the necessary life skills. It is confirmed by Obschonka (2014), stating that entrepreneurial values and behaviors can help the students succeed in the 21st century.

Every educational institution has to apply entrepreneurial education. The research by Malach and Kristova (2017) found that entrepreneurial culture is useful in shaping the spirit, thought, and climate of entrepreneurship at school. Entrepreneurial education based on entrepreneurial functions will have a positive influence on the students' attitudes and intentions. Besides, it will build students' positive perception of entrepreneurship (Baidi & Suyatno, 2018; Boldureanu et al., 2020).

The implementation of entrepreneurial education needs appropriate preparation. The success depends on the curriculum, facilities, and infrastructures, as well as the educational institution, supports. Furthermore, it will reach a better result with the support of the principal with entrepreneurial leadership. Park (2012) and Pihie et al. (2014) revealed that entrepreneurial leadership influences the innovative school culture, especially the one from the teachers. Entrepreneurial leadership is the answer to establish a successful organization in developing entrepreneurship (Fernald et al., 2005). It indicates that entrepreneurial leadership can improve the teachers' knowledge and enthusiasm

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(teacherpreneurship), allowing them to be creative and innovative in developing the learning process and thus instilling the entrepreneurial values into the students. Berry (2013) stated that teacherpreneur is a teacher who can run the teaching process effectively; they can foster the students' skills and creativity, a model of 21st-century education.

Moreover, Buckley and Kisito (2016) confirm that a teacherpreneur is proven able to spread entrepreneurial values to the students and society. The benefits encourage students to develop entrepreneurial intentions and enthusiasm. Therefore, it is clear the principal's entrepreneurial leadership and teacherpreneur are two important variables in establishing the students' entrepreneurial intentions. Indeed, the latter has direct impact on the students' entrepreneurial intentions. Teacherpreneurs become the external factor influencing the students to take entrepreneurship. Meanwhile, entrepreneurial leadership has indirect influence. Hence, the correlation between entrepreneurial leadership, teacherpreneur, and students' entrepreneurial intentions is interesting to study.

Previous studies have discussed the correlation between entrepreneurial leadership, teacherpreneurship, and entrepreneurial intentions. Puni et al. (2018) found that entrepreneurial education influences entrepreneurial intentions, mediated by self-efficacy. Research by Bae et al. (2014) concluded that entrepreneurial education is correlated with entrepreneurial intentions. Ferreira et al. (2017) and Gerba (2012) revealed that students obtaining entrepreneurial knowledge through education increased their entrepreneurial intentions. The studies focused on the influence of entrepreneurial education on entrepreneurial intentions through quantitative research using a questionnaire as the instrument. The focus and the findings did not show the variables influencing the entrepreneurial intentions. Therefore, further investigation is necessary.

The study is designed to know the influence of entrepreneurial leadership on students' entrepreneurial intentions as well as the impact on teacherpreneurship in three schools (Madrasah Tsanawiyah, Madrasah Aliyah, and Vocational School) organized by Pondok Pesantren Alkamal Kebumen, Central Java, Indonesia. In Indonesia, schools are managed by two different ministries: ministry of education and culture and ministry of religious affairs. The former manages public schools (SD, SMP, and SMA/SMK), while the latter organizes Madrasah Ibtidaiyah (MI), Madrasah Tsanawiyah (MTs), and Madrasah Aliyah (MA). The curriculum used is different. The one applied in madrasah emphasizes more on religious subjects, while the public school focuses on common subjects. However, the principal of each institution has taken several efforts to develop the students' entrepreneurial skills and spirit by establishing several entrepreneurship-based school programs, such as mushroom cultivation, selling in the market, hydroponic farming, and business center managed by students. The study exposes detailed variables in entrepreneurial education that influence the students' entrepreneurial intentions. By so doing, the study is expected to encourage precisely the primary agents of learning, such as the principal and the teachers, to develop the students' entrepreneurial intentions.

Literature Review

1. *Instilling entrepreneurial intentions into the students*

Pesantren, one of the Islamic education institutions, plays a significant role in preparing the Muslim generation with entrepreneurship values. To date, the institution is recognized for its emphasis on afterlife aspects and abandonment of the life skills, thereby causing the prejudice that the graduates cannot follow the development of science and technology. Instilling entrepreneurial intentions to students in *pesantren* is one of the answers to the question of the educational process in a madrasah, in that it does emphasize not only the hereafter but also prepares the graduates who can grow hand in hand with science and technology.

Instilling entrepreneurial intentions becomes significant in shaping the students' entrepreneurial behavior. Entrepreneurial intentions are defined as the motivation encouraging an entrepreneurial behavior as well as the reflection of the organizational leader's vision and organizational culture. Three factors influence the intentions: an individual's attitude towards entrepreneurship, social norms promoting familial trust, and self-efficacy (Ambad, et al., 2016; Chen, 2019; Krueger, et al., 2000). Similarly, Fragoso et al. (2020) stated that the personalities, self-efficacy, and attitude are the strong predictors for the students' entrepreneurial intentions. In education, the research by Turker and Selcuk (2009) revealed two factors determining the students' intentions. The first is the support from the environment and the learning process provided by the school, aiming to inspire the students. The second is structural support, which is a comprehensive and collaborative encouragement of the school, parents, and society. Entrepreneurial education given at school can improve the students' entrepreneurial intentions (Agbim et al., 2010; Ferreira et al., 2017; Hattab, 2014). However, the intentions is also influenced by family background, peers, skills, and age (Agbim et al., 2010).

2. *Entrepreneurial leadership and students' entrepreneurial intentions*

Entrepreneurial leadership is the one providing the vision of organizational development, product, and services based on entrepreneurship. An individual with this type of leadership has high curiosity, open-mindedness, new experiences, and readiness to face unexpected things (Butler, 2017). They always try to create opportunities, develop appropriate programs, build the skills, and guide the organization through transformation (Leih & Teece, 2016). Entrepreneurial leadership is commonly owned by founder-leaders (Renko et al., 2015).

Fernald et al. (2005) explained that entrepreneurial leadership includes five aspects: visionary, risk-taking, achievement-oriented, motivating, as well as creative, flexible, and patient. Meanwhile, according to Leonard (2013), entrepreneurial leadership at school is an effort to promote creative values in academic, social, or economic. The research by Scott and Webber (2013) concluded that a principal having entrepreneurial enthusiasm has several characteristics. (a) He shows innovative behavior through the skills within the organization, optimism, and effective communication. (b) He utilizes the network to develop the organization. (c) He employs the Internet and technology to facilitate communication. (d) He builds local and global cultural perspectives to develop knowledge and cooperation skills in general. (e) He arranges the organizational concept as the sources for the students, teachers, and the school members. (f) He develops IT-based learning. The ideas prove that entrepreneurial leadership provides the knowledge of entrepreneurs for the teachers and the students, creating innovation and creativity in the school. Empiric findings of several studies revealed that entrepreneurial leadership has a significant favorable influence on the employees' innovative behavior (Bagheri, 2017; Li et al., 2020; Park, 2012). The innovative behavior of the teachers inspires and motivates the students to create similar innovation, particularly in the fields of entrepreneurship.

3. *Teacherpreneur and students' entrepreneurial intentions*

Teacherpreneur is defined as the teacher with entrepreneurship enthusiasm, characterized by creative performance in establishing creative experience and initiating enjoyable learning for students (Feriady et al., 2020). Teachers with entrepreneurial enthusiasm (teacherpreneur) are the ones with leadership, knowledge, strategies, and skills to provide an excellent education for the students. Besides, they commit to share their skills with others (Berry & Moore, 2010). Teacherpreneur serves to spread innovative and creative cultures in the education field (Berry, 2011). The theories show that teacherpreneurs are active, creative, innovative, and inspiring. Teacherpreneurs have three competencies: technical skills, conceptual skills, and personal skills (Rohmah et al., 2017). The first includes the abilities to apply the skills, understand the use of the learning method and media. The second deals with the ability to think creatively, solve problems, and create something. The last covers the abilities to communicate, cooperate, understand the students, and motivate the students to be more productive. The competencies determine the way the teacherpreneur provide entrepreneurial education to students, shaping their entrepreneurial behavior contributing to their intentions.

Based on the theories, the hypotheses of the research are the following.

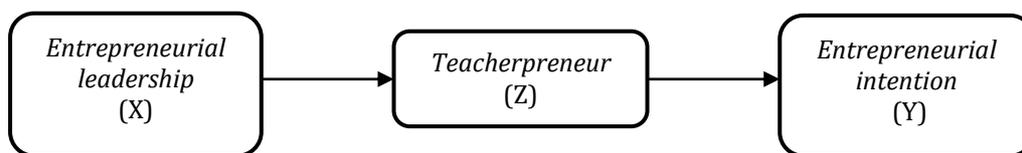
H1.1: Entrepreneurial leadership influences teacherpreneur

H1.2: Teacherpreneur influences students' entrepreneurial intentions

H1.3: Teacherpreneur mediates the influence of entrepreneur leadership on students' entrepreneurial intentions

The correlation between the research variables is presented in the following scheme.

Illustration 1. The correlation among the research variables



Methodology

Research Type

The research is an ex post facto quantitative with correlation type of which the hypothesis is tested using Partial Least Square Structural Equation Modelling (PLS-SEM). Ex post facto with correlation type was selected because it was to observe the influence and the correlation of several variables in the field, without manipulating them. The population includes all teachers and students of three educational institutions organized by Pondok Pesantren Al Kamal Gombang Kebumen, Central Java, Indonesia. They are 70 teachers and 1010 students consisting of 600 MTs students, 180 Madrasah Aliyah, and 230 vocational students. The teachers were selected through saturated sampling because the number is below 100. Meanwhile, the students were selected using stratified random sampling using the Slovin formula, with 0.05 level of error. The formula selected 171 Madrasah Tsanawiyah, 50 Aliyah, and 65 Vocational. The demography of the respondents is presented in Tables 1 and 2.

Table 1. Demography of the Teachers

Profile	Description	Percentage Teacher
Gender	Male	41%
	Female	59%
Teaching experience	0 – 5 years	37%
	6 – 10 years	23%
	11 – 15years	13%
	16 – 20 years	14%
	> 20 years	13%
Education level	D3	0,03%
	S1	87%
	S2	10%

Table 2. Demography of the Students

Level	Percentage	
	Male	Female
SMP	50%	50%
SMK	32%	68%
MA	24%	76%

The technique of collecting the data

The variables of the research include independent variable, which is entrepreneurial leadership (X), dependent variables, which is students' entrepreneurial intentions (Y), and intervening variable, which is teacherpreneur (Z). The empiric data of the variables are gathered through a questionnaire distributed to all respondents. The close questionnaire is made into three: entrepreneurial leadership and teacherpreneur filled by the teachers; and entrepreneurial intentions by the students. The questionnaire employed referred to the theoretical framework developed by the researcher. Before it was used, the instruments passed two stages of tests. The first was construct validity test through an expert judgment, and the second is empirical validity and reliability tests. Each questionnaire uses a Likert scale model with scores 1 to 4, resulting in an interval data. The positive questionnaire has score 1 for 'highly disagree', 2 'disagree', 3 'agree', and 4 'highly agree'. Meanwhile, the negative questionnaire is otherwise: 4 for 'highly disagree', 3 'disagree', 2 'agree', and 1 'highly agree'.

Data analyzing technique

The data were analyzed using the SEM method (Structural Equation Modelling) functioning to test and analyze the hypothesis employing 3.30 version of smartPLS software. The analysis consists of two steps: evaluating the measuring model and analyzing using a structural model. The first is used to examine the model's validity and reliability (convergent validity, discriminant validity, and reliability). Meanwhile, the structural model analysis step is to test the proposed hypotheses. Permutation was also conducted to analyze the data because the samples were different. It was to determine the path coefficient of two sample groups to see the significant difference. If differences are not found, it can be assumed that both groups are identical to test the proposed hypothesis. The difference was based on the p-value, which should be more than 0.05 (Chin & Dibbern, 2010).

Testing the Indicators

Construct Reliability and Validity Testing

Table 3. Results of Construct Reliability and Validity

Variable	Cronbach's Alpha	rho_A	Composite Reliability	AVE	Predicate
Entrepreneurial Intention	0,837	0,891	0,873	0,501	Reliabel dan valid
Entrepreneurial Leadership	0,941	0,955	0,947	0,508	Reliabel dan valid
Teacherpreneur	0,958	0,963	0,962	0,587	Reliabel dan valid

Research construct is reliable if the score of Cronbach's Alpha and Composite Reliability reached at least 0.60 (Budhiana, 2016). A construct is valid if the average variance extracted (AVE) score is above 0,50 (Hair et al., 2011). The table shows that each indicator of the research variables has fulfilled the requirements of the reliability and validity

test. The indicators consist of 18 items for entrepreneurial leadership, 20 for teacherpreneur, and 7 for entrepreneurial intentions. The validity and reliability scores show that each indicator can explain the validity of the variables.

Discriminant Validity Test

Discriminant validity is used to determine the reflective correlation between the constructs, meaning that if it is fulfilled, a construct will be a proper measurement for the variables. HTMT (heterotrait-monotrait) is one of the methods to test the discriminant validity, requiring the score to be below 0,9 (Henseler et al., 2014).

Table 4. HTMT Ratio

Variable	Entrepreneurial Intention	Entrepreneurial Leadership
Entrepreneurial Leadership	0,188	
Teacherpreneur	0,157	0,826

Based on table 4, each correlation among variables has an HTMT ratio below 0.9, thereby generating a reflective correlation among constructs and each construct is considered as a good measurement.

Findings / Results

All variables of the research (entrepreneurial leadership, teacherpreneur, and entrepreneurial intentions) are examined based on the respondents' scores. Each variable is measured using the indicators of the questionnaires, which have been tested for validity and reliability using SEM with smartPLS software. A formative evaluation follows a reflective evaluation to determine the significance of the correlation among variables and to test the hypotheses.

Hypotheses testing

Evaluating the R-square score

Table 5. R-Square

Variable	R-Square	R-Square Adjusted
Entrepreneurial Intention	0,026	0,023
Teacherpreneur	0,688	0,687

Exogenous variable ability explains an endogenous variable stated in R-square of an endogenous latent variable (Juliandi, 2018). The criteria of the R-square ratio has several categories: if R-square is 0.75, the model is substantial (strong); if the R-square is 0.50, it is moderate (medium), and if R-square is 0.25, it is weak (Hair et al., 2011). The evaluation results of the R-square scores presented in table 3 indicate two facts. First, entrepreneurial leadership can explain the teacherpreneur variable as much as 0.688 (68.8%), categorized as substantial. Second, entrepreneurial leadership and teacherpreneur can explain the entrepreneurial variable as much as 0.026 (2.6%), categorized as very weak.

Path Coefficients/Direct Effect

The accepted or rejected hypothesis analyzed by SEM PLS is determined by the bootstrapping results of path coefficient analysis if the t-statistic is above 1.96 and p-value below 0,05 (Low et al., 2017).

Table 6. Path Coefficients

	Original Sample	Sample Mean	Standard Deviation	t statistics	p values	Hypotheses
EL → T	0,830	0,842	0,046	18,057	0,000	Accepted
T → EI	0,162	0,200	0,046	3,558	0,000	Accepted

Notes: EL (entrepreneurial leadership); T (teacherpreneur); EI (entrepreneurial intentions)

The results of the path coefficients presented in table 6 reveal two facts. First, the influence of entrepreneurial leadership on teacherpreneur shows a t-statistic value of 18.057 and p-value 0.000, meaning that hypothesis H1.1 (entrepreneurial leadership influences teacherpreneur) is accepted. The correlation between teacherpreneur and entrepreneurial intentions resulted in the t-statistic of 3.558 and p-value 0.000, meaning that hypothesis H1.2 (teacherpreneur has a direct influence on entrepreneurial intentions) is accepted.

*Indirect Effect Analysis**Table 7. Indirect Effect*

	Original Sample	Sample Mean	Standard Deviation	t statistics	p values	Hypotheses
EL → T → EI	0,135	0,169	0,041	3,282	0,001	Significant

Indirect effect analysis serves to examine the influence of exogenous variables on endogenous variables mediated by the intervening variable. In the present study, the exogenous variable is the entrepreneurial intentions, the intervening variable is teacherpreneur, and the endogenous is entrepreneurial intentions. The significance criteria are similar to that of the path coefficient: the t-statistic was 18.057, and the p-value below 0.005. Table 7 showed that entrepreneurial leadership has an indirect but significant influence on entrepreneurial intentions because the t-statistic is above 1.96 and p-value below 0.05 (Low et al., 2017). The results also indicated that hypothesis H1.3 (teacherpreneur mediates the influence of entrepreneurial leadership on entrepreneurial intentions) is accepted.

Discussion

The study aims to examine three hypotheses. First, entrepreneurial leadership influences teacherpreneur (H1.1). Second, teacherpreneur influences students' entrepreneurial intentions (H1.2). Third, teacherpreneur mediates the influence of entrepreneurial leadership on students' entrepreneurial intentions (H1.3). From the analysis, it is found that all hypotheses are accepted. Entrepreneurial leadership has a positive and direct significant influence on teacherpreneur, with t-statistics of 18.057 and p-value 0.000. Teacherpreneur has a positive and direct significant influence on entrepreneurial intentions, with t-statistics of 3.558 and p-value 0,000. Entrepreneurial leadership has an indirect influence on entrepreneurial intentions, mediated by teacherpreneur. The t-statistic value reached a score of 3.282 and p-value 0.001.

The first finding shows that entrepreneurial leadership has a significant direct influence on teacherpreneur. The finding supports the previous studies, mentioning that a principal's entrepreneurial leadership influences the teachers' self-development. Some other studies concluded that entrepreneurial leadership has a positive and significant influence on the employees' innovative behavior (Bagheri, 2017; Li et al., 2020; Park, 2012) and the school's innovative culture (Pihie et al., 2014). Besides, research by Wibowo and Saptono (2018) confirmed that entrepreneurial leadership has a direct influence on the teachers' creativity, leading to innovative behavior. Teachers' creativity and innovation are one of the characteristics of teachers enthusiastic with entrepreneurship (teacherpreneur). It is similar to that by Mokaya et al.(2012), stating that entrepreneurship involves creativity and innovation. An individual's innovation is one element of entrepreneurship (Drucker, 2014). A principal implementing an entrepreneurial leadership can create management that stimulates the school members' entrepreneurial intentions. It will also provide more insights and inspiration to the teachers to develop entrepreneurship, thereby creating a teacherpreneur. Consequently, teachers will be more innovative and productive in the teaching process.

Second, teacherpreneur has a direct and significant influence on students' entrepreneurial intentions. Teacherpreneur consists of leadership, knowledge, strategies, and the skills to develop an excellent education for the students. A teacherpreneur is also committed to using their skills to contribute to the spread of innovative culture and creativity in education (Berry, 2011; Berry & Moore, 2010). The theory revealed that teachers with entrepreneurship spirit will always be creative and innovative in teaching, allowing them to inspire the students. Teachers developing the organization can contribute to improving the students' internal factors, which include efficacy and needs for achievement (Feriady et al., 2020). Shelton and Archambault (2018) explain that teachers' entrepreneurship can improve teaching practices and leadership in the classroom. The aspects can encourage the students to do the same. Teachers with good teaching practices and leadership can inspire the students through ideas and actions. An inspired student will imitate the creativity and innovation, allowing the student to develop the enthusiasm for entrepreneurship. The research by Souitaris et al.(2007) mentioned that entrepreneurship-based learning and the inspiration gained by the students could contribute to their entrepreneurial intentions. Besides, social skills owned by a teacherpreneur could motivate and improve the productive culture of the students, stimulating them to develop entrepreneurial intentions (Rohmah et al., 2017).

Third, entrepreneurial leadership has an indirect influence on the students' entrepreneurial intentions, mediated by teacherpreneur. The finding confirms the conclusion by Feriady et al. (2020), mentioning that teacherpreneur mediates the influence of entrepreneurial leadership on the students' entrepreneurial intentions. The principal's leadership creates the management and entrepreneurial education process, which improves the knowledge of the school members, especially the teachers. This way, they can play their role and interact with the students through the learning process based on entrepreneurship, as arranged by the teachers and the principal. It is proven to generate a positive attitude towards entrepreneurship. It influences the students' self-efficacy and their entrepreneurial intentions (Bazan et al., 2020; Saeed et al., 2015; Xuan et al., 2020). The research by Ferreira et al. (2017), Gerba (2012) and Lackeus

(2015), concluded that entrepreneurial education experienced by the students could increase their entrepreneurial intentions. Further, research by Boldureanu et al. (2020) revealed that entrepreneurial education involving the teachers with the same enthusiasm has a positive influence on the students' attitude and willingness. Therefore, teacherpreneur is necessary for the relationship between entrepreneurial leadership and students' entrepreneurial intentions. However, entrepreneurial leadership will not be effective if it is not mediated by a teacherpreneur.

The findings of the present study, in general, supports the recommendation of the previous research about the vital roles of the government and the educational institutions to design a program that facilitates the students' entrepreneurship, allowing them to change their mindset, attitude, and intentions about entrepreneurship. It is expected that the changes will benefit their future (Burmansah et al., 2020; Xuan et al., 2020). The programs and pieces of training attended by the students at school will improve their entrepreneurial intentions (Ozaralli & Rivenburgh, 2016). The influence of their peers and environment can also contribute to the intentions (Latsch, 2018; Patuelli et al., 2020). The characteristic of the education provided by the Islamic boarding school, which teaches independence to the students, also supports the students' entrepreneurial intentions.

Conclusion

Based on the analysis, the study concluded several results. First, entrepreneurial leadership has a positive and significant influence on teacherpreneur. Second, teacherpreneur has a positive and significant influence on students' entrepreneurial intentions. Third, teacherpreneur mediates the influence of entrepreneurial leadership on entrepreneurial intentions. The findings indicate the need to implement entrepreneurial leadership at school; it is to develop the school members' creativity and innovation, stimulating the growth of entrepreneurial intentions of, particularly, the students.

Suggestions

The findings of the present study recommended the importance of a principal's leadership and the teachers' teacherpreneurship to instill the intentions into the students. The principal and the teachers with entrepreneurial enthusiasm can spread the spirit to the students. In the context of educational institutions under the Islamic boarding school organization, the population of the research, the ideas of instilling entrepreneurial intentions to the students still have the momentum. The image of Islamic educational institution of emphasizing the curriculum only on the hereafter aspects and thus generating graduates unable to compete in the modern life should be proportionally responded.

Limitations

Two matters limit the present study. First is the population, in that it only involved three schools/madrasahs under single Islamic boarding school, thereby it cannot reflect the diverse characteristics of many institutions. Therefore, the next research is expected to include a broader scope of Islamic educational institutions to represent the entire Islamic educational institution in Indonesia. Second, the research employed a quantitative study with a cross-sectional design. It is expected that the next research uses similar variables but with a longitudinal research design. Indeed, qualitative research examining the phenomena of entrepreneurial education is also crucial to provide in-depth understanding. For example, it can study the perception of the principal and the teachers of the importance of developing the entrepreneurial intentions of the students.

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