



Research article

Entrepreneurial self-efficacy among elementary students: the role of entrepreneurship education

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ABSTRACT

Since the increasing attention among scholars on entrepreneurship education, there is a lack of empirical evidence on how to prepare for entrepreneurial education at an early age. Therefore, this study examines the effect of the outdoor learning environment and entrepreneurial education on entrepreneurial self-efficacy in Indonesia's elementary school students. This study incorporated 320 elementary students in the five and six-year students as respondents in several elementary schools in Jakarta of Indonesia. The sample was gathered using convenience sampling by giving online questionnaires with five scales of measurement. The findings showed that the outdoor learning environment has closely related to entrepreneurship education and entrepreneurial self-efficacy. Second, entrepreneurship education plays a significant role in mediating the relationship between the outdoor learning environment and students' self-efficacy. Our research provides insight to future researchers that primary education plays a significant role in the growth and development of self-efficacy and entrepreneurial intentions.

1. Introduction

A large and growing body of literature review has investigated the importance of entrepreneurship in the past decade. Entrepreneurship has been thought of as a crucial factor for national well-being, either in developed or developing countries (Fayolle and Linan, 2014; Atmojo et al., 2019; Wiklund et al., 2019). Furthermore, Ratten and Jones (2021) mentioned that entrepreneurship can be considered a great choice to cope with the dynamic of global change. For these matters, building individual entrepreneurial intention could be conducted through entrepreneurship education (Attali and Yemini, 2017; Turner and Gianiodis, 2018). In short, entrepreneurship could be an effective strategy in enhancing the economy's sustainability by providing new job creation.

Entrepreneurship education leads to an improvement in entrepreneurial attitudes, both for entrepreneurs and those who have the potential to become entrepreneurs (Linan et al., 2011). In acquaintance with this issue, the education system in several European countries such as England, Sweden, Belgium, Denmark, and Norway have proposed a strategy to appliance entrepreneurship education for primary and secondary schools (Ndou et al., 2018). The entrepreneurship education model in England, for instance, was introduced for students in elementary school in the form of how to make handicrafts from ceramics. When

the craft is finished, the student's work is presented through the bazaar (Johansen and Schanke, 2013). The mentioned entrepreneurship education model has forecasted an effective way while implemented in Indonesia, which is suffering from the entrepreneurs' population.

In fact, entrepreneurship learning activities at elementary school-age children should be provided differently instead of other levels of education (Falck et al., 2017). Early childhood education and elementary schools' curriculum can also emphasize useful, safe, and enjoyable pedagogical activities (Lindstrom, 2013). Habidin et al. (2016) argued that learning activities can be designed outside the classroom (outdoor learning environment), enabling students to learn, explore, and create things. Additionally, the entrepreneurship model for elementary students also a requisite project that enhances children's involvement. Khan et al. (2019) pointed out that the outdoor learning environment is a vital element of the curriculum. The primary rationale is that the outdoor learning environment provides children with a greater sense of freedom to think instead of the classroom education model. Additionally, it allows students to interact with peers and the natural environment outdoors (Cooper, 2015).

An outdoor learning environment can also impact entrepreneurial education. It will provide students to have real experiences for students in the entrepreneurial activities that can drive to entrepreneurship

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education (Huber et al., 2014). Some empirical studies by Hagglund (2015); Jonassen and Land (2012); Toutain et al. (2017) reinforced that the outdoor learning environment recognizes students to know and involve in entrepreneurial practice and entrepreneurship education. The outdoor learning activity will authorize students to have several aspects, including cognitive, affective, and psychomotor (Siswoyo et al., 2020). Lastly, entrepreneurship education focuses on learning activities in the classroom, while the outdoor learning environment will complement entrepreneurial learning and being an effective strategy to enhance the knowledge and psychomotor of students (Nahulae, 2020).

In addition to entrepreneurship education, the outdoor learning environment is part of building students' self-efficacy. Bandura (1977) noted that self-efficacy is one's belief ability to complete work or specific tasks, while Chen et al. (2004) mentioned that self-efficacy has linked with individuals' behavior and has a role in influencing one's choices and the level of effort. A person with high self-efficacy tends to provide a greater effort to accomplish tasks instead of person who have insufficient self-efficacy (Bandura, 1977). In the entrepreneurship field, Drnovsek et al. (2010) remarked that entrepreneurial self-efficacy is a person's belief to achieve success and its capability to deal with challenges during initiating a new business.

The outdoor learning environment is closely linked with students' entrepreneurial self-efficacy. Davies (1996) pointed out that the learning environment that has been created appropriately will promote students on entrepreneurial activity that can support the students' entrepreneurial self-efficacy. Since elementary students tend to enjoy outdoor learning activities, it will be an effective way to support entrepreneurial education in the classroom. Indeed, Axelsson et al. (2015); Cassidy et al. (2015) emphasized that the outdoor learning environment not only affects but also strengthens entrepreneurial self-efficacy through the experiences provided to elementary school students.

Since the increasing concern on manifold entrepreneurs in Indonesia, entrepreneurship education needs be promoted from primary school to the university level. However, the existing studies in Indonesia mainly focus on the level of university students (Kusmintarti et al., 2016; Patricia and Silangen, 2016), senior high school (Purwana et al., 2018; Saptono et al., 2019), vocational schools (Eryanto et al., 2019; Wardana et al., 2020), while the concern on elementary students has been overlooked by scholars. Additionally, some previous studies have undervalued the essentials of outdoors for children's development. For these matters, there is a need for a better understanding of whether and how the outdoor learning environment can affect entrepreneurial self-efficacy in elementary school students, as well as comprehend the mediating role of entrepreneurial education.

The paper begins with an overview of the significance of entrepreneurship and followed by a literature review in Section 2. Section 3 presents the sample collection and examination method used in this research. The paper provides findings in Section 4 and discusses the results in Section 5. Finally, the paper suggests several recommendations to promote the entrepreneurial intentions in Section 6.

2. Literature review

2.1. Outdoor learning environment

Some empirical studies by Nabi et al. (2018) notes that entrepreneurial education leads to awareness, skills, and knowledge of entrepreneurship. However, providing an appropriate entrepreneurship education primarily for elementary students is challenging. Some studies consider several factors in supporting entrepreneurship education, including learning competence, learning culture, and learning environment (Lindner, 2019; Keinanen and Kairisto-Mertanen, 2019). A prior study by Huber et al. (2014) asserts that entrepreneurship education through a particular learning environment can develop relevant skillsets for the entrepreneurial activity of students, both cognitive and noncognitive. Supporting the aforementioned studies, the learning environment

outside is crucial for students as it promotes a better experience for children of what and how an individual interacts with their circumstances (Kangas et al., 2017). Indeed, Lattacher and Wdowiak (2020) reveal that entrepreneurial learning may involve experiential processes within an entrepreneurial context is experiential in nature.

The outdoor learning environment can also support the learning activities in the classroom during especially for entrepreneurship studies (Olaniran, 2020). Ehrlin et al. (2015) remarks that entrepreneurship education in elementary school is well known as entrepreneurial learning, in which a teacher seeks to link activities in school with community activities, giving benefits to the business community and also advantages for the family. In detail, Cassidy et al. (2015) provides several points in conducting outdoor learning activities, such as (a) the teacher takes students to participate in field activities in the middle of the regular learning process; (b) bringing students out of class for about 15 min in the middle of the regular learning process, and (c) providing assignments that must be completed outside the classroom. However, it is necessary for the teacher to create learning activities that encourage the development of entrepreneurial competencies. Khan et al. (2019) argue that in early childhood education, the outdoor environment is mainly acknowledged as a crucial element of the curriculum for students, possessing the embryonic to promote and enhance all dimensions of development. In short, the outdoor learning environment allows children to achieve experience and a greater sense of freedom than conducted in the classroom education approach (Muela et al., 2019). Thus, the hypothesis is provided as follows:

H1. Outdoor learning environment positively influences entrepreneurial education.

2.2. Entrepreneurial self-efficacy

A seminal study in this area is the work of Bandura (1977), who explained that self-efficacy is one's belief in individual ability to complete work or certain tasks. Self-efficacy is a concept that relates to human behavior, the level of effort he/she makes, and one's perseverance (Chen et al., 2004). Similarly, Bandura (1977) notes that self-efficacy can be explained that in completing certain tasks, which implicating that an individual with high self-efficacy will tend to make more effort and keep trying to complete these tasks instead of individuals who have low self-efficacy levels (Bandura, 1977). In the context of entrepreneurship, Drnovsek et al. (2010) argues that entrepreneurial self-efficacy is individual belief in their ability to achieve success and their ability to confront challenges and opportunities while initiating a new business.

Some scholars in believing that entrepreneurial self-efficacy has linked with the students learning environment. Unlike conventional learning in the classroom, an outdoor learning environment provides a better insight and field experience for children toward nature and how students interact with peers. For entrepreneurship penetration for children, this model seems effective as its involvement of various insights of knowledge and the surrounding circumstances in project-based work. Similarly, a previous study by Davies (1996) reveals that the outdoor learning environment influences students' entrepreneurial self-efficacy. The learning environment is structured in such a way as to provide students with an entrepreneurial experience, which in turn strengthens their self-efficacy and entrepreneurial intentions. Moreover, the characteristics of elementary school students who prefer outdoor learning activities are certainly effective when the outdoor learning environment is conditioned and organized to support entrepreneurship education. Cassidy et al. (2015) asserts that the outdoor learning environment not only influences but also strengthens entrepreneurial self-efficacy through experiences given to elementary school students.

In addition to entrepreneurial self-efficacy, the outdoor learning environment also has an acquaintance with entrepreneurship education. Some empirical studies show that outdoor learning environment, teacher creativity directly impact entrepreneurship education (Lorz, 2011; Huber

et al., 2014). The learning model outside the classroom, which is proposed appropriately, will provide experience for students during their learning activities. Several studies by Axelsson et al. (2015); Jonassen and Land (2012); Toutain et al. (2017) also emphasized that an outdoor learning environment designed in such a way that allows students to recognize and experience entrepreneurial activities strongly supports entrepreneurship education activities. This will enrich students not only cognitive, affective but also psychomotor aspects of students. Moreover, when entrepreneurship education activities only focus in the classroom, then the outdoor learning environment becomes an effective strategy to increase students' knowledge and psychomotor entrepreneurship. Therefore, the hypothesis is presented as below:

H2. Outdoor learning environment positively influences entrepreneurial self-efficacy.

2.3. The mediating role of entrepreneurship education

Entrepreneurship education has become a great matter of discuss in entrepreneurship study as its role in driving students' entrepreneurial intentions. Entrepreneurship education covers an individual's ability to stimulate ideas, creativity, and innovation to manage a project toward entrepreneurship (Afolabi et al., 2017). Since the pivotal role of entrepreneurship education, it has raised attention among scholars in higher education or vocational schools as its role in enhancing intention of business and fewer in the context of primary schools (Wardana et al., 2020; Karyaningsih et al., 2020). However, some scholars believe that entrepreneurship education in primary schools is essential in promoting skills and abilities (Floris and Pillitu, 2019; Jones, 2019). Accordingly, entrepreneurship education can lead to students' self-efficacy (Nowiński et al., 2019). According to Agboola (2020), entrepreneurship education for elementary schools tends to focus on stimulating entrepreneurial awareness. Thus, entrepreneurship education in elementary schools is crucial not only in providing knowledge but also in shaping attitudes, behaviors, and mindsets as an entrepreneur (Huber et al., 2014). Some scholars document that when entrepreneurship education is appropriately combined with outdoor learning activities, it will gain students' self-efficacy (Fox et al., 2018). Another rationale, the role of entrepreneurship education as a mediation between outdoor learning environment and entrepreneurial self-efficacy, can be explained in the situation in outdoor learning environment provides a memorable experience that can reinforce entrepreneurship education (Mukesh et al., 2020) This is in accordance with Fayolle and Linan (2014) that entrepreneurship education is an effective means of internalizing various experiences, knowledge, values, norms and the like to students. Therefore, the hypothesis is provided as follow:

H3. Entrepreneurial education positively impacts entrepreneurial self-efficacy

H4. The outdoor learning positively affects entrepreneurial self-efficacy mediated by entrepreneurship education.

3. Method and materials

3.1. Research framework

This study adopted a cross-sectional method to comprehensively recognize the impact of the outdoor learning environment (OLE) and entrepreneurial education (EE) toward the entrepreneurial self-efficacy (ESE) elementary students in Jakarta of Indonesia. In more detail, the research framework is illustrated in Figure 1.

3.2. Sample and data collection

The sample was gathered using an online survey with five Likert scales to respondents. This study employed a convenience sample of 350

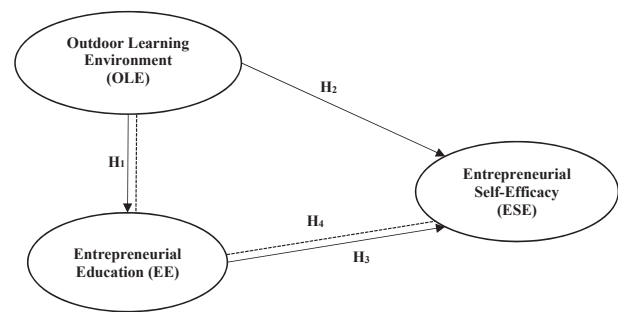


Figure 1. The Conceptual Framework. Note: dash line shows the indirect effect. Source: own elaboration based on Wilson et al. (2007); Fayolle and Linan (2014); Huber et al. (2014); Lindstrom (2013); Ernst (2014); Cassidy et al. (2015).

in grades five and six of elementary students in Jakarta of Indonesia. This research was conducted during the Covid-19 pandemic between August to October 2020 using online questionnaires. We distributed the questionnaires via WhatsApps and Telegram, and children were assisted by parents in filling the questionnaires. This is essential for study in elementary schools' students considering it is the golden age for an individual that significantly promotes self-efficacy and intention. Additionally, the advantage of conducting research during the pandemic is that parents are more likely to have more time to accompany their children during learning and teaching activities, as well as complete the questionnaires. Participation in this survey was voluntary, and the students who have engaged were enlightened of their anonymity, and their participation was not subject to any benefit. From the distributed questionnaires, we found approximately 8.57 percent of missing data and about 320 responses can be used for further data analysis. The instruments of this study have been proven by the ethical commission of Faculty Economics, Universitas Negeri Jakarta in Indonesia. The detail of respondents is presented in Table 1.

Table 1 illustrates the characteristic of respondents engaged in this research. The participants in this study were students between the age of fifth and six years of their study. The percentage of gender almost equal between male and female students with the percentage of female was slightly higher than male students. From the parents' occupation, it can be known that the students' parents were working as entrepreneurs with a percentage of approximately 35 percent. Thus, it followed by teachers/lecturers and civic servants with the percentage of almost 30 percent and 25 percent, respectively (see Figure 2).

Table 1. The demographic data for respondents.

No.	Characteristic	Frequency	Percentage
1.	Grade		
	Fifth	160	50.00
	Sixth	160	50.00
2.	Gender		
	Female	175	54.68
	Male	145	45.32
3.	Area		
	East Jakarta	70	21.87
	Central Jakarta	60	18.75
	South Jakarta	63	19.68
	West Jakarta	65	20.31
4.	Parents' occupation		
	Entrepreneur	113	35.31
	Teacher/Lecturer	95	29.68
	Civil Servants	80	25.00
	Soldier	32	10.01

3.3. Instrument development and data analysis

The instruments in this study were enlarged based on theoretical framework and relevant previous papers. To calculate respondent reactions to entrepreneurial self-efficacy (ESE) level, this study adapted six instruments developed by Wilson et al. (2007); Fayolle and Linan (2014). To engaging data of entrepreneurial education (EE), it was adapted 12 instruments from Huber et al. (2014); Lindstrom (2013). Furthermore, nine instruments from Ernst (2014); Cassidy et al. (2015) were adapted to measure the outdoor learning environment (OLE). All the items representing the independent and dependent variables were answered along a five-point Likert scale, which ranges from 1 showing “strongly disagree” to 5 representing “strongly agree”. Those instruments were modified in terms of language from English to Bahasa Indonesia. The collected data were analyzed using structural equation modeling partial least square (SEM-PLS) to estimate constellation for many variables. We followed procedures data analysis of SEM-PLS by Chin (1999) and Hair et al. (2020), which consisting of (1) Outer model estimation; (2) Inner model, (3) Goodness of Fit test, and (4) Hypothesis estimation.

4. Results and discussion

4.1. Assessment of outer model

In the outer model test stage, we followed criteria from Hair et al. (2013; 2020) to meet the convergent validity by using loading factor value (λ) should higher than 0.70, and the average variance extracted (AVE) value should higher than 0.50. Table 2 informs the results of the outer model measurement. Based on the table, it is known that the value (λ) of the entrepreneurial education (EE), outdoor learning environment (OLE), and entrepreneurial self-efficacy (ESE) are ranging between 0.748 to 0.887 (>0.70), meaning that all variables to achieve the convergent validity. The AVE value of EE, OLE, and ESE variables have a range value from 0.580 to 0.684 (>0.50), indicating that the instrument was valid. In addition to validity calculation, Hair et al. (2013; 2020) also suggested to provide the reliability estimation in the outer model test. The variable to achieve the reliability when the composite reliability (CR) value is higher than 0.70, and Cronbach's Alpha (α) value need to greater than 0.70. Based on Table 2, it is known that the CR values of the EE, OLE, and ESE variables are 0.866, 0.846, and 0.825 > 0.70 , respectively, so that it

Table 2. Results of outer model measurement.

Code	Variable/Indicator	(λ)	CR	α	AVE
1. Entrepreneurial Education (EE)			0.866	0.769	0.684
ee12	The learning process in class made me able to take advantage of opportunities	0.887			
ee4	The learning process in class made me make my assignments complete on time	0.824			
ee9	The learning process in class makes me able to work with others	0.765			
2. Outdoor Learning Environment (OLE)			0.846	0.760	0.580
ole3	In schools, social service activities are held regularly	0.814			
ole6	In schools, there are often activities that are concerned with the environment such as picking up trash.	0.783			
ole8	The teacher takes the children to study outside the classroom to make observations on the environment	0.748			
3. Entrepreneurial self-efficacy (ESE)			0.825	0.770	0.611
ese2	I am able to manage the use of money that I have.	0.753			
ese3	I am able to think differently from other people.	0.778			
ese5	I have the nature of a leader	0.763			
ese6	I am able to provide my own decisions	0.752			

Source: Authors (2021)

achieved the reliability criteria. Likewise, the values of the variables EE, OLE, and ESE were 0.769, 0.760, and 0.770 > 0.70 , meaning that it fulfilled the reliability test.

According to Hair et al. (2020), the variable must also meet convergent and discriminant validity with the criteria for the value of cross loading value should higher than 0.70. Table 3 informs the results of discriminant validity, where the cross-loading score of the EE, OLE, and ESE variables is greater than 0.70. This implicating that the model achieved both the convergent and discriminant validity.

To measure the discriminant validity, this study also estimated as suggested by Henseler et al. (2015) using the heterotrait-monotrait. The discriminant validity is achieved when the ratio is less than 0.90. As

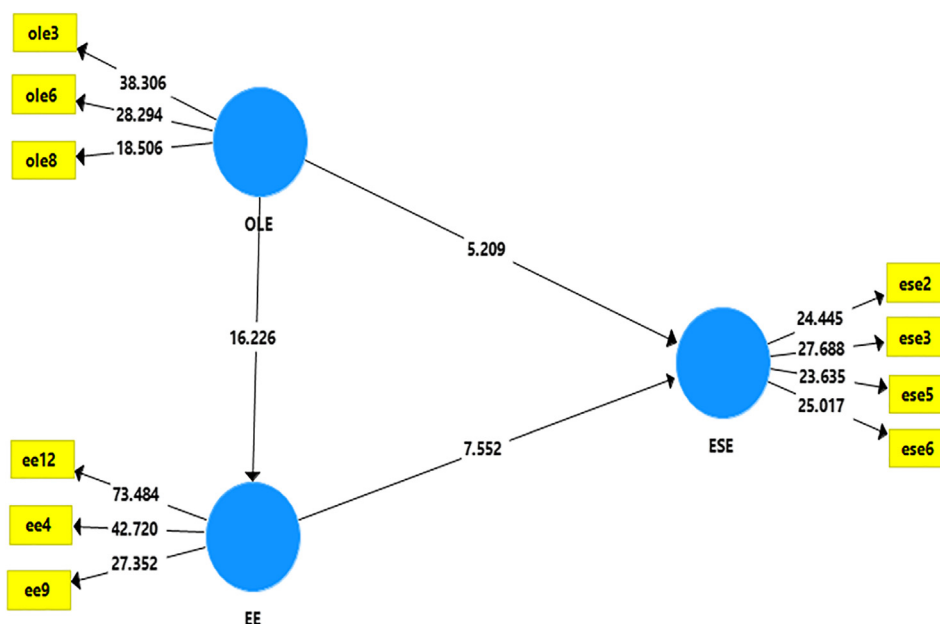


Figure 2. Results of the Structural Equation Research Model. Source: own elaboration by Authors.

Table 3. Discriminant validity.

	EE	OLE	ESE
EE	0.827		
OLE	0.589	0.782	
ESE	0.561	0.519	0.761

Source: Authors (2021)

informed in Table 4, it shows that the ratio for each construct ranges from 0.701 to 0.777 (<0.90), indicating to confirm the discriminant validity.

4.2. Assessment of inner model

The second procedure is the inner model test or structural model. Referring to Hair et al. (2013; 2020), the structural model test procedures carried out following several tests, including collinearity test, R-squared, F-square, and (4) Q-square predictive. The collinearity test carried out is to check the value of the Variance Inflation Factor (VIF) coefficient, where the VIF value must be lower than 5.00 (Hair et al., 2013). Table 5 summarizes the result of the collinearity test for EE, OLE, and ESE variables. What is striking out in Table 5 indicates that the coefficient of variance inflation factor (VIF), EE, OLE, and ESE variables is lower than 5.00, meaning that there is no collinearity. Thus, all indicators of the tested constructs are valid and can be processed for the next analysis.

The next procedure is the R-Square (R²) test aims to see whether each endogenous latent variable has predictive power to the model or not. This study followed criteria from Chin (1998) with 0.67 (robust), 0.33 (moderated) and 0.19 (weak model). Based on the results of the R² estimation, it is known that EE has a value of 0.347, meaning that 34.7 percent of the EE variant is explained by OLE with a moderate level of prediction. Furthermore, ESE has an R² value of 0.369, implicating that the ESE variant is explained by OLE and EE with a moderate level of prediction. In addition to R² calculation, the size test (f²) was conducted to find out how broad the size of the influence of the predictor latent variable (exogenous latent variable) is on the structural model. We used the criteria developed by Hair et al. (2013) and Chin (1998), where the values of 0.02, 0.15, and 0.35 indicate the effect of small, medium, and large sizes. The results of the f² test show that OLE affects EE with a broad level (f² value = 0.532). Furthermore, OLE and EE have an effect on ESE with a medium level (f² value = 0.245). Lastly, the relevant prediction of Q₂ which aims to measure how well the observed values generated by the model are, as well as the estimated parameters. The value of Q² > 0 (zero) shows that the model has predictive relevance. The value of Q² < 0 indicates that the model lacks predictive relevance. Based on the test results, it is known that the Q² value of the OLE, EE, and ESE variables is greater than 0, meaning that the model has predictive relevance.

4.3. Goodness of fit

The third procedure is the estimation of the goodness of fit of the measurement model (outer) and structural model (inner) on a fixed basis based on the study results. Hair et al. (2013; 2020) provides indicator that the model achieved the goodness of fit if Cronbach's Alpha (α) > 0.70, composite reliability (CR) > 0.70, and Average Variance Extracted (AVE) > 0.50. Table 6 provides the result of the goodness of fit testing. From the table, it can be known that the values of CR and AVE of all variables accomplished the criteria for the goodness of fit model, and it

Table 4. Heterotrait-monotrait ratio.

	EE	ESE	OLE
EE			
ESE	0.724		
OLE	0.777	0.701	

Source: Authors (2021)

Table 5. Variance inflation factor (VIF).

	EE	ESE	OLE
EE		1.532	
ESE			
OLE	1.000	1.532	

Source: Authors (2021)

can be concluded that the structural and measurement models in this study can be stated to be good.

In addition, we examine the hypothesis testing based on research data processing by utilizing SEM-PLS analysis using the bootstrap resampling method. In this stage, we used the statistical analysis (t-test) (>1.96) and the probability (p-value) that should be smaller than 0.05. Table 7 informs that all hypotheses in this study were accepted, considering it has a t-value in the range of 5.209 and 16.226 (>1.96) and a p-value of 0.000 < 0.050.

4.4. Discussions

The result of the study provides four hypotheses proposed. The first hypothesis of this study is that the outdoor learning environment positively influences entrepreneurial education. Understanding entrepreneurship education model for children can promote the intention in the future. The statistical calculation in this study proved that the outdoor learning environment can influence entrepreneurial education. This study's results confirm with those of Davies (1996) and Cassidy et al. (2015), which remarked that a supportive learning environment for entrepreneurship learning in elementary schools is learning outside the classroom. The outdoor learning environment will also provide children with experiences about nature and how they interact with their circumstances. Furthermore, entrepreneurial learning may involve entrepreneurial experiential processes. The finding of this finding should be interpreted that a practical and strategic step for the outdoor learning activities allows teachers to involve their students in business or entrepreneurial activities around the school. The fact that the students not only obtain the pleasure of outdoor learning activities but also gain a lot of knowledge related to entrepreneurship which is crucial for supporting the entrepreneurship education.

With regard to the first hypothesis, an interesting finding of this study is that the outdoor learning environment can drive students' entrepreneurial self-efficacy. This result is in agreement with an empirical study by Jones (2019) that the outdoor learning environment effectively fosters student entrepreneurial self-efficacy. The fundamental rationale is that the outdoor learning environment allows students to have more excellent knowledge from the field. This showed that students are more likely enjoy learning outside the classroom and it obtains valuable insight into entrepreneurship. Moreover, when learning activities are carried out by outside or field class, it will enable them to know entrepreneurial activities. The experience and knowledge gained by students through these activities will increase students' entrepreneurial self-efficacy. In comparison with the classroom learning activity, the outdoor learning environment provides direct learning activities from their circumstances, mainly related to entrepreneurship activity, leading to entrepreneurial self-efficacy (Chen et al., 2004).

The third hypothesis of this study is that entrepreneurial education can explain students' entrepreneurial self-efficacy. As expected, the

Table 6. The assessment of goodness of fit for outer model.

Variable	α	CR	AVE
Entrepreneurial Education (EE)	0.769	0.866	0.684
Outdoor Learning Environment (OLE)	0.760	0.846	0.580
Entrepreneurial self-efficacy (ESE)	0.770	0.825	0.611

Source: Authors (2021)

Table 7. The summary of testing results.

Hypothesis	Relationship	Beta	T-value	P-value	Decision
H ₁	OLE → EE	0.589	16.226	0.000	Confirmed
H ₂	OLE → ESE	0.289	5.209	0.000	Confirmed
H ₃	EE → ESE	0.390	7.552	0.000	Confirmed
H ₄	OLE→EE→ESE		6.846	0.000	Confirmed

Note: OLE = outdoor learning environment; EE = entrepreneurial education; ESE = entrepreneurial self-efficacy.

preliminary data calculation indicated that entrepreneurial education can explain Indonesian students' entrepreneurial self-efficacy. The reason behind this finding is that entrepreneurship education from elementary to tertiary levels is an effective strategy for increasing entrepreneurial self-efficacy (Saptono et al., 2020). The difference is when in high school and college, the focus is already on the development of intention, readiness, and entrepreneurial behavior (Mukhtar et al., 2021). Our result of 320 students believes that through entrepreneurship education can gain either gain knowledge or motivation to choose entrepreneurship as a carrier in the future. In particular, for the elementary school level, the main learning achievement is solely limited to efforts to grow and develop entrepreneurial self-efficacy. The result of this study agrees with the findings of Lorz (2011); Huber et al. (2014), that entrepreneurship education for elementary school students can shape attitudes, behaviors, and mindset as an entrepreneur in the future. This study also confirms Fayolle and Linan (2014) findings, who stated that entrepreneurship education can form and shape entrepreneurial self-efficacy. These findings also reinforce the result of prior research by Wilson et al. (2007), which shows this relationship.

Furthermore, the fourth hypothesis is that entrepreneurship education can explain the relationship between outdoor learning environment and students' entrepreneurial self-efficacy. The preliminary data calculation showed that the outdoor learning can influence students' self-efficacy with moderate degree level. With the involvement entrepreneurship education for students, it can support students' self-efficacy. In other words, learning experiences outside the classroom will be powerful in increasing students' entrepreneurial self-efficacy by implementing effective entrepreneurship education. In this case, teachers are required to be skilled in conducting and linking various experiences of children gained outside the classroom with entrepreneurship education. When there is continuity between the outdoor learning environment and entrepreneurship education, the entrepreneurial self-efficacy of students will increase. The findings of this research are in agreement with some preliminary studies by Lorz (2011); Huber et al. (2014), which deal with this matter.

4.5. Practical and theoretical implications

The results of our study add insight on how to increase students' entrepreneurial efficacy in the Indonesian context. Complementing the model developed by Wilson et al. (2007); Lindstrom (2013); Ernst (2014), and Cassidy et al. (2015), our research provides input in the context of elementary schools, that entrepreneurship education can be a mediator of the role of outdoor learning environment on students' entrepreneurial self-efficacy. Moreover, optimizing entrepreneurship education at the elementary level should be accompanied by an outdoor learning environment. Thus, entrepreneurship education at the elementary level is not enough only to be carried out in the classroom but also outside the classroom that enables students to obtain valuable input related to entrepreneurship from the real world.

5. Conclusion

This study aims to examine the effect of the outdoor learning environment and entrepreneurial education on entrepreneurial self-efficacy

in elementary school students. The key conclusion to be drawn from the results is that the outdoor learning environment can promote elementary students' entrepreneurial education and entrepreneurial self-efficacy. The study indicates that students who actively participate in the outdoor learning environment can explain the level of entrepreneurial self-efficacy. The findings also note the crucial role of entrepreneurial education in mediating the outdoor learning environment and students' entrepreneurial self-efficacy. This study provides an input for the level of elementary school which in the phase of developing entrepreneurial self-efficacy. From these results, it is necessary to pay attention to classroom learning methods that involve students actively participate in the classroom and outside the classroom to develop non-cognitive skills and business ability. Second, the outdoor learning environment may be elaborated with traditional games, holding storytelling activities in front of the class or in performing arts activities. Third, it is necessary to increase the intensity of field observation activities that are intended to engage students in learning outdoor the classroom by directly relating to the observed object. However, this study lies some limitations. First, the study solely involved the outdoor learning environment and entrepreneurship education in explaining students' entrepreneurial self-efficacy. In detail, the measurement for the outdoor learning activities of the study was perceived from their previous outdoor experience of students before the Covid-19 pandemic. Second, this study is limited to only geographical categories in elementary schools in Indonesia. Future research can elaborate on psychological factors such as attitudes, mindset, knowledge, and student intentions to provide an insight into the dominant factor predictor of student entrepreneurial intentions at the elementary school level.

Declarations

Author contribution statement

Ari Saptono, Agus Wibowo and Bagus Shandy Narmaditya: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Umi Widyastuti and Heri Yanto: Performed the experiments; Contributed reagents, materials, analysis tools or data.

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Data availability statement

Data included in article/supplementary material/referenced in article.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

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References

- Afolabi, M.O., Kareem, F.A., Okubanjo, I.O., Ogunbanjo, O.A., Aninkan, O.O., 2017. Effect of entrepreneurship education on self-employment initiatives among Nigerian science & technology students. *J. Educ. Pract.* 8 (15), 44–51.
- Agboola, O.W., 2020. Framework for school stage entrepreneurship education in Nigeria. *Entrepr. Educ. Pedag.* 2515127419899484.

- Atmojo, I.R.W., Sajidan, S., Sunarno, W., Ashadi, A., 2019. Improving the entrepreneurship competence of pre-service elementary teachers on professional education program through the skills of disruptive innovators. *Element. Educ. Online* 18 (3). Retrieved from. <http://ilkogretim-online.org.tr/index.php/io/article/view/2950/2606>.
- Attali, O.M., Yemini, M., 2017. Initiating consensus: stakeholders define entrepreneurship in education. *Educ. Rev.* 69 (2), 140–157.
- Axelsson, K., Hagglund, S., Sandberg, A., 2015. Entrepreneurial learning in education: Preschool as a take-off for the entrepreneurial self. *J. Educ. Train.* 2 (2), 40–58.
- Bandura, A., 1977. Self-efficacy: toward a unifying theory of behavioral change. *Psychol. Rev.* 84 (2), 191–215.
- Cassidy, A.L., Streat, W.B., Wright, W.A., Watson, G.P., 2015. The interplay of space, place and identity: transforming our learning experiences in an outdoor setting. *Collect. Essays Learn. Teach.* 8, 27–34.
- Chen, G., Gully, S.M., Eden, D., 2004. General self-efficacy and self-esteem: toward theoretical and empirical distinction between correlated self-evaluations. *J. Org. Behav.: Int. J. Ind. Occup. Org. Psychol. Behav.* 25 (3), 375–395.
- Cooper, A., 2015. Nature and the outdoor learning environment: the forgotten resource in early childhood education. *Int. J. Early Childh. Environ. Educ.* 3 (1), 85–97.
- Davies, M.M., 1996. Outdoors: an important context for young children's development. *Early Child Dev. Care* 115 (1), 37–49.
- Drnovsek, M., Wincent, J., Cardon, M.S., 2010. Entrepreneurial self-efficacy and business start-up: developing a multi-dimensional definition. *Int. J. Entrepren. Behav. Res.* 16 (4), 329–348.
- Ehrlin, A., Insulander, E., Sandberg, A., 2015. Perspectives on entrepreneurial learning in the early years of education. *J. Educ. Human Dev.* 4 (3), 151–159.
- Ernst, J., 2014. Early childhood educators' preferences and perceptions regarding outdoor settings as learning environments. *Int. J. Early Childh. Environ. Educ.* 2 (1), 97–125.
- Eryanto, H., Swaramarinda, D.R., Nurmalsari, D., 2019. Effectiveness of entrepreneurship practice program: using cipp program evaluation. *J. Entrepr. Educ.* 22 (1), 1–10.
- Falck, O., Gold, R., Heblich, S., 2017. Lifting the iron curtain: school-age education and entrepreneurial intentions. *J. Econ. Geogr.* 17 (5), 1111–1148.
- Fayolle, A., Linan, F., 2014. The future of research on entrepreneurial intentions. *J. Busin. Res.* 67 (5), 663–666.
- Floris, M., Pillitu, D., 2019. Improving entrepreneurship education in primary schools: a pioneer project. *Int. J. Educ. Manag.*
- Fox, J., Pittaway, L., Uzuegbunam, I., 2018. Simulations in entrepreneurship education: serious games and learning through play. *Entrepren. Educ. Pedagog.* 1 (1), 61–89.
- Habidin, N.F., Salleh, M.L., Latip, N.A.M., Jusoh, O., Azman, M.N.A., Fuzi, N.M., Ong, S.Y.Y., 2016. Kids entrepreneurship for learning and assessment systems (KELAS) for early childhood institution: critical success factor analysis and decision-making systems. *Int. J. Acad. Res. Busin. Soc. Sci.* 6 (9), 399–420.
- Hair Jr., J.F., Howard, M.C., Nitzl, C., 2020. Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *J. Busin. Res.* 109, 101–110.
- Hair, J.F., Ringle, C.M., Sarstedt, M., 2013. Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance. *Long Range Plann.* 46 (1–2), 1–12.
- Henseler, J., Ringle, C.M., Sarstedt, M., 2015. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. Acad. Mark. Sci.* 43 (1), 115–135.
- Huber, L.R., Sloof, R., Van Praag, M., 2014. The effect of early entrepreneurship education: evidence from a field experiment. *Eur. Econ. Rev.* 72, 76–97.
- Johansen, V., Schanke, T., 2013. Entrepreneurship education in secondary education and training. *Scand. J. Educ. Res.* 57 (4), 357–368.
- Jonassen, David, Land, Susan, 2012. *Theoretical Foundations of Learning Environments*. Routledge, England.
- Jones, C., 2019. A signature pedagogy for entrepreneurship education. *J. Small Busin. Entrepr. Dev.*
- Kangas, M., Siklander, P., Randolph, J., Ruokamo, H., 2017. Teachers' engagement and students' satisfaction with a playful learning environment. *Teach. Educ.* 63, 274–284.
- Karyaningsih, R.P.D., Wibowo, A., Saptono, A., Narmaditya, B.S., 2020. Does entrepreneurial knowledge influence vocational students' intention? Lessons from Indonesia. *Entrepr. Busin. Econ. Rev.* 8 (4), 138–155.
- Keinanen, M.M., Kairisto-Mertanen, L., 2019. Researching learning environments and students' innovation competences. *Educ. Train.*
- Khan, M., Bell, S., McGeown, S., de Oliveira, E.S., 2019. Designing an outdoor learning environment for and with a primary school community: a case study in Bangladesh. *Landscape Res.* 45 (1), 1–16.
- Kusmintarti, A., Thoyib, A., Maskie, G., 2016. Entrepreneurial characteristics as a mediation of entrepreneurial education influence on entrepreneurial intention. *J. Entrepr. Educ.* 19 (1), 24–37.
- Lattacher, W., Wdowiak, M.A., 2020. Entrepreneurial learning from failure. A systematic review. *Int. J. Entrepr. Behav. Res.*
- Linan, F., Rodriguez-Cohard, J.C., Rueda-Cantucho, J.M., 2011. Factors affecting entrepreneurial intention levels: a role for education. *Int. Entrepr. Manag. J.* 7 (2), 195–218.
- Lindner, J., 2019. Entrepreneurial spirit for the whole school—ways to become an ee si-entrepreneurship school. *Disc. Commun. Sustain. Educ.* 10 (2), 5–12.
- Lindstrom, L., 2013. What do children learn at Swedish preschools? *Int. Educ. Stud.* 6 (4), 236–250.
- Lorz, M., 2011. *The Impact of Entrepreneurship Education on Entrepreneurial Intention*. University of St. Gallen.
- Muela, A., Larrea, I., Miranda, N., Barandiaran, A., 2019. Improving the quality of preschool outdoor environments: getting children involved. *Eur. Early Childh. Educ. Res. J.* 27 (3), 385–396.
- Mukesh, H.V., Pillai, K.R., Mamman, J., 2020. Action-embedded pedagogy in entrepreneurship education: an experimental enquiry. *Stud. High. Educ.* 45 (8), 1679–1693.
- Mukhtar, S., Wardana, L.W., Wibowo, A., Narmaditya, B.S., 2021. Does entrepreneurship education and culture promote students' entrepreneurial intention? The mediating role of entrepreneurial mindset. *Cogent Educ.* 8 (1), 1918849.
- Nabi, G., Walmsley, A., Liñán, F., Akhtar, I., Neame, C., 2018. Does entrepreneurship education in the first year of higher education develop entrepreneurial intentions? The role of learning and inspiration. *Stud. High. Educ.* 43 (3), 452–467.
- Nahulae, E.M., 2020. The effect of outdoor learning model on improving cognitive ability in entrepreneurial learning at the field of electricity. *J. Educ. Learn. (EduLearn)* 14 (4), 473–480.
- Ndou, V., Secundo, G., Schiuma, G., Passiante, G., 2018. Insights for shaping entrepreneurship education: evidence from the European entrepreneurship centers. *Sustainability* 10 (11), 4323.
- Nowiński, W., Haddoud, M.Y., Lančarić, D., Egerová, D., Czegeledi, C., 2019. The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Stud. High. Educ.* 44 (2), 361–379.
- Olaniran, S.O., 2020. Are education graduates only trained to teach? A review of entrepreneurship opportunities in the education sector. *J. Entrepr. Educ.* 23, 1–9.
- Patricia, P., Silangen, C., 2016. The effect of entrepreneurship education on entrepreneurial intention in Indonesia. *DeReMa (Dev. Res. Manag.): Jurnal Manajemen* 11 (1), 67–86.
- Purwana, D., Suhud, U., Fatimah, T., Arnelita, A., 2018. Antecedents of secondary students' entrepreneurial motivation. *J. Entrepr. Educ.* 21 (2), 1–7.
- Ratten, V., Jones, P., 2021. Entrepreneurship and management education: exploring trends and gaps. *Int. J. Manag. Educ.* 19 (1), 100431.
- Saptono, A., Wibowo, A., Narmaditya, B.S., Kusumojanto, D.D., 2019. Determinant factors of development entrepreneurial education: lesson from senior high school in Indonesia. *Univ. J. Educ. Res.* 7 (12), 2837–2843.
- Saptono, A., Wibowo, A., Narmaditya, B.S., Karyaningsih, R.P.D., Yanto, H., 2020. Does entrepreneurial education matter for Indonesian students' entrepreneurial preparation: The mediating role of entrepreneurial mindset and knowledge. *Cogent Educ.* 7 (1), 1836728.
- Siswoyo, A.A., Setyawan, A., Citrawati, T., Bendriyanti, R.P., Dewi, C., 2020. Management of outdoor learning models for environmental education courses. *Univ. J. Educ. Res.* 8 (11), 5036–5043.
- Toutain, O., Fayolle, A., Pittaway, L., Politis, D., 2017. Role and impact of the environment on entrepreneurial learning. *Entrepr. Reg. Dev.* 29 (9–10), 869–888.
- Turner, T., Gianiodis, P., 2018. Entrepreneurship unleashed: understanding entrepreneurial education outside of the business school. *J. Small Busin. Manag.* 56 (1), 131–149.
- Wardana, L.W., Narmaditya, B.S., Wibowo, A., Mahendra, A.M., Wibowo, N.A., Harwida, G., Rohman, A.N., 2020. The impact of entrepreneurship education and students' entrepreneurial mindset: the mediating role of attitude and self-efficacy. *Heliyon* 6 (9), e04922.
- Wiklund, J., Nikolaev, B., Shir, N., Foo, M.D., Bradley, S., 2019. Entrepreneurship and well-being: past, present, and future. *J. Busin. Vent.* 34 (4), 579–588.
- Wilson, F., Kickul, J., Marlino, D., 2007. Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: implications for entrepreneurship education. *Entrepr. Theory Pract.* 31 (3), 387–406.