



Research Article

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Do Entrepreneurial Characteristics Moderate the Relationship between Experiential Learning and Entrepreneurial Mindset?

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Abstract

This study aims not only to verify 'the experiential learning–entrepreneurial mindset relationship', but also to test which entrepreneurial characteristics (i.e., innovativeness, risk-taking propensity, need for achievement, and proactiveness) moderate 'the experiential learning–entrepreneurial mindset relationship'. The data were collected from 313 undergraduate students who have already taken the entrepreneurship course and analyzed using confirmatory factor analysis and hierarchical regression analysis. The results showed the positive relationships between experiential learning and elaboration mindset, and between experiential learning and implementing mindset. However, need for achievement and proactiveness were found to moderate 'the experiential learning–entrepreneurial mindset relationship', whereas innovativeness and risk-taking propensity did not moderate that relationship. This study provides theoretical implications in extending the literature of experiential learning theory, Dweck's implicit theory of intelligence, and entrepreneurial characteristics. This study also has practical implications for entrepreneurship educators.

Keywords: experiential learning, entrepreneurial mindset, entrepreneurial characteristics, moderating effect

1. Introduction

In Indonesia, the number of graduates with diploma and bachelor's degree are growing rapidly (e.g., Amalia & von Korflesch, 2021). However, in February 2022 the Indonesia's unemployment rate was 5.83 percent, of which "almost 14 percent were graduates of diploma and bachelor's degree" (Unair, 2022). A solution to this high unemployment problem is entrepreneurship, which drives job creation to reduce the unemployment rate (e.g., Decker et al., 2014; Zamrudi & Yulianti, 2020; Amalia & von Korflesch, 2021; da Fonseca, 2022; Global Entrepreneurship Monitor, 2022; Sukardi et al., 2022). This is the reason why in the context of universities, entrepreneurship has become a compulsory or elective subject in many undergraduate programs (e.g., Ahmad, 2015; Ahmad et al., 2018), including in Indonesia (e.g., Zamrudi & Yulianti, 2020; Amalia & von Korflesch, 2021). In addition, the government also promotes the Program of *Kampus Merdeka* that provides the entrepreneurship education program for undergraduate students, namely *Wirasaha Merdeka* (Kemdikbudristek RI, n.d.).

Entrepreneurship education is intended not only to improve cognitive skills but also non-cognitive skills (e.g., Huber et al., 2014; Moberg, 2014; Rodriguez & Lieber, 2020). Non-cognitive skills are best developed for individuals at an early age (Huber et al., 2014), and they are most associated with the entrepreneurial mindset (Rodriguez & Lieber, 2020). In turn, entrepreneurial mindset is a good predictor for future career success (Rodriguez & Lieber, 2020). To foster non-cognitive skills, entrepreneurship education is conducted by using enterprise education (Lackeus, 2014; Moberg, 2014; Rodriguez & Lieber, 2020) or entrepreneurial education (Lackeus, 2014; Rodriguez & Lieber, 2020), in which entrepreneurial education is conducted by using experiential learning (Lackeus, 2014; Hägg & Gabrielsson, 2020; Rodriguez & Lieber, 2020).

The recent studies found the positive relationship between experiential learning and entrepreneurial mindset (e.g., Rodriguez & Lieber, 2020; Jackson et al., 2021; Lane & Roberts, 2021; Reynolds, 2021). Similarly, previous studies in Indonesia (e.g., Handayati et al., 2020; Karyaningsih et al., 2020; Saptono et al., 2020; Wardana et al., 2020) also found the positive relationship between entrepreneurial education and entrepreneurial mindset. However, these studies did not verify the moderating effect of entrepreneurial characteristics on the positive relationship between entrepreneurial education (i.e., experiential learning) and entrepreneurial mindset. Therefore, this study aims to provide an insight to fill the gap, which is beyond to verify 'the experiential learning-entrepreneurial mindset relationship', this study also tests which entrepreneurial characteristics moderate 'the experiential learning-entrepreneurial mindset relationship'.

2. Literature Review and Development of Hypotheses

2.1 *Experiential Learning and Entrepreneurial Mindset*

Experiential learning describes "the role of learning in entrepreneurship" (Rae & Carswell, 2000, p. 221), in which learning is "the process whereby knowledge is created through the transformation of experience" (Kolb, 2015, p. 51). Experiential learning is rooted in the experiential learning theory, in which "knowledge results from the combination of grasping and transforming experience" (Kolb, 2015, p. 51). Grasping experience consists of two modes, namely, concrete experience and abstract conceptualization, while transforming experience includes two modes, namely reflective observation and active experimentation (Kolb, 2015). These four modes refer to experience learning process which is portrayed as the Kolb's experience learning cycle successively including concrete experiences, reflective observation, abstract conceptualization, and active experimentation (Kolb, 2015). Based on Kolb's experience learning cycle (Kolb, 2015), "concrete experiences form the basis for reflective observation; those reflections help learners conceptualize the experience; these abstract concepts are then applied and actively tested to create new experiences" (Lee, 2020, p. 11).

Entrepreneurial mindset refers to a way of thinking related to entrepreneurship (McGrath &

MacMillan, 2000; Cui et al., 2021; Pidduck et al., 2021; Bernardus et al., 2022), while the essence of entrepreneurship is related to entrepreneurial opportunities (Shane & Venkataraman, 2000), i.e., new venture opportunities (Wang et al., 2013). Specifically, entrepreneurial mindset generates entrepreneurial behavior (i.e., new venture creation) to pursue entrepreneurial opportunities (Pidduck et al., 2021). Mathisen and Arnulf (2013) categorize the entrepreneurial mindset into two forms including elaborating mindset and implementing mindset. Elaborating mindset refers to a why question [i.e., why should I start my own business?], while implementing mindset refers to a how question [i.e., how can I start my own business?] (Mathisen & Arnulf, 2013). In addition, entrepreneurial mindset is rooted in Dweck's implicit theory of intelligence, in which the entrepreneurial mindset is recognized as the growth mindset instead of the fixed mindset (e.g., Vsetecka, 2018; Bernardus et al., 2022).

Individuals with a high involvement in experiential learning have a strong tendency to engage directly in tasks and solve problems based on their own experiences and the experiences of others in real-world contexts (Reynolds, 2021) and also to "apply their knowledge and skills in real-world contexts" (Flores et al., 2021, p. 3). We expect that their involvement in experiential learning might encourage them to attain their performance (Leal-Rodriguez & Albort-Morant, 2019), i.e., their way of thinking to behave entrepreneurially (McGrath & MacMillan, 2000; Cui et al., 2021; Pidduck et al., 2021; Bernardus et al., 2022) in terms of 'why they should start their own business' [i.e., elaborating mindset] as well as 'how they can start their own business' [i.e., implementing mindset] (Mathisen & Arnulf, 2013). Entrepreneurial mindset can be updated, improved, and shaped through learning (Cui et al., 2021; Pidduck et al., 2021), i.e., experiential learning as found in previous studies (e.g., Rodriguez & Lieber, 2020; Jackson et al., 2021; Lane & Roberts, 2021; Reynolds, 2021). Based on the preceding discussion, we hypothesize the following:

H1a. Experiential learning is positively related to elaborating mindset.

H1b. Experiential learning is positively related to implementing mindset.

2.2 Moderating Role of Entrepreneurial Characteristics

Entrepreneurial characteristics refer to psychological characteristics which distinguish between entrepreneurs and non-entrepreneurs (Koh, 1996) and also important for successful entrepreneurs (e.g., Koh, 1996; Gürol & Atsan, 2006; Sánchez, 2013; Huber et al., 2014; Huarng & Yu, 2021). In this study, four entrepreneurial characteristics, namely innovativeness, risk-taking propensity, need for achievement, and proactiveness (e.g., Koh, 1996; Gürol & Atsan, 2006; Sánchez, 2013; Huber et al., 2014) were examined as the moderator variables on the positive relationship between experiential learning and entrepreneurial mindset.

Innovativeness. Innovativeness refers to the individuals' tendency to think and act in new and unique ways (Koh, 1996; Mueller & Thomas, 2001; Aldahdoh et al., 2020; Bernardus et al., 2020) as well as to accept changes and to try new things or create something new (Hendarman & Cantner, 2018; Aldahdoh et al., 2020) in order to fulfil the unsatisfied needs (Hyrsky & Tuunanen, 1999). As their innovativeness level increases, their thought and action in new and unique ways also increase. Therefore, individuals with a high innovativeness are stronger to behave entrepreneurially compared to the ones with a low innovativeness (Koh, 1996; Gürol & Atsan, 2006).

Risk-taking propensity. Risk-taking propensity refers to "the propensity of an individual to exhibit risk taking or risk avoidance when confronted with risky situations" (Gürol & Atsan, 2006, p. 30) or with possibility of failure (Sánchez, 2013). Individuals with a high risk-taking propensity have a lower degree of risk avoidance than the ones with a low risk-taking propensity (Huber et al., 2014). In the realm of entrepreneurship (i.e., identifying opportunities [Shane & Venkataraman, 2000]), individuals high in risk-taking propensity are more inclined to identify the opportunities (Cui et al., 2021; Bernardus et al., 2022). They are also more likely to start a business (Rauch & Frese, 2007). Therefore, individuals with a high risk-taking propensity are more likely to behave entrepreneurially compared to the ones with a low risk-taking propensity (Koh, 1996; Gürol & Atsan, 2006; Sánchez,

2013).

Need for achievement. Need for achievement refers to “psychological driving force behind human action” (Koh, 1996, p. 14) or “desire to be successful” (Koh, 1996, p. 14) as well as “desire to do well” (Huber et al., 2014, p. 84). Individuals with a high need for achievement prefer “to solve problems themselves and not dependent on others, set goals and strive for these goals through their own efforts, exhibit a higher performance in challenging tasks and are innovative in looking for new and better ways to improve performance” (Gürol & Atsan, 2006, p. 29). Therefore, individuals with a high need for achievement are more likely to behave entrepreneurially compared to the ones with a low need for achievement (Koh, 1996; Gürol & Atsan, 2006).

Proactiveness. Proactiveness refers to the relationship between individuals and their environment, in which how individuals alter their situation and environment (Bateman & Crant, 1993). Proactiveness can be defined as “the tendency to initiate and maintain actions that directly alter the surrounding environment or context” (Bateman & Crant, 1993, p. 105; Sánchez, 2013, p. 450). Individuals with a high proactiveness prefer to “scan for opportunities and act on them, show initiative, take action, persevere until they have made a significant change” (Bateman & Crant, 1993, p. 105; Sánchez, 2013, p. 451), and “anticipate and prevent problems before they occur” (Sánchez, 2013, p. 451). Therefore, individuals with a high proactiveness are more likely to behave entrepreneurially compared to the ones with a low proactiveness (Sánchez, 2013).

Overall, individuals with high entrepreneurial characteristics have a strong tendency to behave entrepreneurially (Koh, 1996; Gürol & Atsan, 2006; Sánchez, 2013), while individuals with a strong entrepreneurial mindset have a strong action-oriented way of thinking to behave entrepreneurially in order to pursue the entrepreneurial opportunities (McGrath & MacMillan, 2000; Cui et al., 2021; Pidduck et al., 2021; Bernardus et al., 2022). Experiential learning plays a role in sharpening the entrepreneurial mindset (e.g., Rodriguez & Lieber, 2020; Jackson et al., 2021; Lane & Roberts, 2021; Reynolds, 2021). Based on the preceding discussion, we hypothesize the moderating effect of innovativeness, risk-taking propensity, need for achievement, and proactiveness on the positive relationship between experiential learning and entrepreneurial mindset, both elaborating mindset and implementing mindset:

H2a. Innovativeness strengthens the positive relationship between experiential learning and elaborating mindset.

H2b. Risk-taking propensity strengthens the positive relationship between experiential learning and elaborating mindset.

H2c. Need for achievement strengthens the positive relationship between experiential learning and elaborating mindset.

H2d. Proactiveness strengthens the positive relationship between experiential learning and elaborating mindset.

H3a. Innovativeness strengthens the positive relationship between experiential learning and implementing mindset.

H3b. Risk-taking propensity strengthens the positive relationship between experiential learning and implementing mindset.

H3c. Need for achievement strengthens the positive relationship between experiential learning and implementing mindset.

H3d. Proactiveness strengthens the positive relationship between experiential learning and implementing mindset.

Figure 1 summarizes the proposed conceptual model of this study.

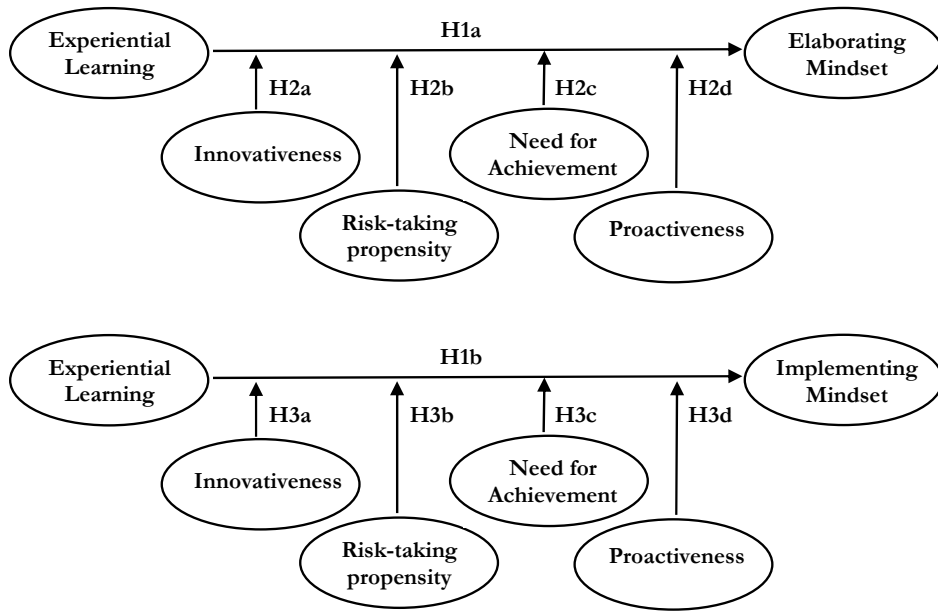


Figure 1: The proposed conceptual model

3. Method

3.1 Data collection and respondents

The data was collected from undergraduate students who have already taken an entrepreneurship course. They came from four universities in East Java province of Indonesia. Four hundred and fifty questionnaires were sent to the respondents and 350 questionnaires were received. As 37 questionnaires were incomplete, 313 questionnaires were used for the analysis. Among the respondents, 124 (39.6%) were males, whereas 189 (60.4%) were females. 140 respondents (44.7%) were aged 20 years old and younger, and 173 respondents (55.3%) were older than 20 years old. 156 students (49.8%) were from a public university, while 157 students (50.2%) were from three private universities.

3.2 Measures

Experiential learning was assessed using 15 items taken from Chavan (2011). Elaborating mindset and implementing mindset were each measured using four items taken from Mathisen and Arnulf (2013). Innovativeness, risk-taking propensity, need for achievement, and proactiveness were measured using four items taken from Mueller and Thomas (2001), four items taken from Zhang et al. (2019), five items taken from Lang and Fries (2006), and five items taken from Bateman and Crant (1993), respectively. In the survey, respondents indicated the extent of their agreement using a five-point Likert scale. All items are listed in the Appendix. Further, we included three control variables (i.e., gender, age, origin of university [see Bernardus et al., 2022]). The control variables were measured as nominal scales, in which coded as 1 for “male” and 2 for “female”, coded as 1 for “20 years old and younger” and 2 for “older than 20 years old”, and coded as 1 for “public university” and 2 for “private university” (see Bernardus et al., 2022).

The survey was conducted in *Bahasa Indonesia*. To translate the original items that were in English, we employed the translation and back-translation procedure (Brislin, 1970; Bernardus et al., 2022). The English version was translated into *Bahasa Indonesia* by the researchers. The translated version was then back-translated into English by other translators. Further, the English and back-translated versions were compared to refine the items (Bernardus et al., 2022).

3.3 Data analysis

We performed confirmatory factor analysis (CFA) to evaluate the overall goodness-of-fit of measurement model of construct as well as the construct validity (i.e., convergent validity) and reliability. Following Bernardus et al. (2020), we utilized hierarchical regression analysis to statistically test the moderating effects of innovativeness, risk-taking propensity, need for achievement, and proactiveness on the: (1) positive relationship between experiential learning and elaborating mindset, and (2) positive relationship between experiential learning and implementing mindset. Firstly, we included three control variables. Secondly, we added experiential learning. Thirdly, we added the four moderator variables. Fourthly, we included the interaction terms to evaluate the moderating effects of the four moderating variables. Referring to Jöreskog et al. (2016), the hierarchical regression analysis was based on the latent variable scores which had been generated by the CFA.

4. Results

4.1 Measurement model of construct

Table 1a indicates that the chi-square statistic was unacceptable, while the ratio of chi-square to degrees of freedom was acceptable (e.g., Hair et al., 2019; Bernardus et al., 2022). The remaining indices (i.e., CFI, NFI, NNFI, RMR, and RMSEA) were acceptable in concordance with the recommended cut-off value (Hair et al., 2019; Bernardus et al., 2022). Therefore, the overall goodness-of-fit of measurement model was a good fit (Hair et al., 2019; Bernardus et al., 2022).

Convergent validity was tested by examining the p-value of factor loading (e.g., Anderson & Gerbing, 1988; Hair et al., 2019; Bernardus et al., 2022). As reported in Table 1a, all factor loadings were positive and statistically significant at 0.01 level. This provided the statistical evidence of the convergent validity (e.g., Anderson & Gerbing, 1988; Hair et al., 2019; Bernardus et al., 2022). The convergent validity was also tested by examining the p-value of phi coefficient (e.g., Schumacker & Lomax, 2016; Bernardus et al., 2022). As reported in Table 1b, all phi coefficients were positive and significant at 0.01 level. This also provided the evidence of the convergent validity (e.g., Schumacker & Lomax, 2016; Bernardus et al., 2022). As also shown in Table 1a, the AVE of each construct, except innovativeness, exceeded the acceptable value of 0.50. It also indicated that the convergent validity of each construct is satisfactory (Fornell & Larcker, 1981; Hair et al., 2019; Bernardus et al., 2022). However, the AVE of innovativeness was unacceptable but close to 0.50, and therefore the convergent validity of innovativeness was adequate (Fornell & Larcker, 1981; Bernardus et al., 2022).

The reliability of each construct was tested by using composite reliability (CR) and Cronbach's alpha (Fornell & Larcker, 1981; Bagozzi & Yi, 1988; Hair et al., 2019; Bernardus et al., 2022). As shown in Table 1a, the CR and Cronbach's alpha of each construct were greater than the recommended acceptable value of 0.70. They indicated that the reliability of each construct is satisfactory (Fornell & Larcker, 1981; Bagozzi & Yi, 1988; Hair et al., 2019; Bernardus et al., 2022).

Table 1: Measurement model of construct (n = 313)

(a) Factor loading, composite reliability, Cronbach's alpha, and average variance extracted

Construct and associated items	Factor loading	t-value	Composite reliability	Cronbach's alpha	Average variance extracted
Experiential Learning			0.950	0.949	0.562
EL1	0.740	15.076			
EL2	0.784	16.402			
EL3	0.799	16.864			
EL4	0.745	15.229			
EL5	0.664	13.085			
EL6	0.760	15.671			
EL7	0.783	16.367			
EL8	0.689	13.683			
EL9	0.715	14.395			
EL10	0.764	15.799			
EL11	0.821	17.558			
EL12	0.800	16.882			
EL13	0.701	14.022			
EL14	0.735	14.935			
EL15	0.727	14.732			
Elaborating Mindset			0.817	0.816	0.528
ELAM1	0.710	13.301			
ELAM2	0.736	13.953			
ELAM3	0.738	13.999			
ELAM4	0.721	13.578			
Implementing Mindset			0.884	0.882	0.658
IMPLM1	0.775	15.739			
IMPLM2	0.731	14.488			
IMPLM3	0.878	19.002			
IMPLM4	0.851	18.095			
Innovativeness			0.791	0.785	0.490
INNOV1	0.731	14.163			
INNOV2	0.818	16.548			
INNOV3	0.586	10.659			
INNOV4	0.644	11.987			
Risk-Taking Propensity			0.900	0.899	0.693
RISK1	0.770	15.680			
RISK2	0.866	18.741			
RISK3	0.856	18.384			
RISK4	0.834	17.644			
Need for Achievement			0.893	0.892	0.627
NACH1	0.736	14.654			
NACH2	0.774	15.735			
NACH3	0.821	17.179			
NACH4	0.859	18.442			
NACH5	0.762	15.406			
Proactiveness			0.870	0.868	0.573
PROACT1	0.729	14.383			
PROACT2	0.810	16.739			
PROACT3	0.718	14.102			
PROACT4	0.745	14.818			
PROACT5	0.780	15.847			

Notes. Overall goodness-of-fit: chi-square = 1534.082 (p = 0.000, degrees of freedom = 758), chi-square/degrees of freedom = 2.024, RMSEA = 0.057, RMR = 0.056, NFI = 0.953, NNFI = 0.974, and CFI = 0.976. All t-values were greater than 2.6, therefore all factor loadings were significant at 0.01 level.

(b) Phi coefficient of inter-construct correlation

	Experiential Learning	Elaborating Mindset	Implementing Mindset	Innovativeness	Risk-Taking Propensity	Need for Achievement	Proactiveness
Experiential Learning	1.000						
Elaborating Mindset	0.518**	1.000					
Implementing Mindset	0.504**	0.427**	1.000				
Innovativeness	0.426**	0.422**	0.684**	1.000			
Risk-Taking Propensity	0.278**	0.173**	0.517**	0.636**	1.000		
Need for Achievement	0.387**	0.492**	0.466**	0.662**	0.427**	1.000	
Proactiveness	0.331**	0.223**	0.531**	0.757**	0.742**	0.581**	1.000

Note. **t-value was greater than 2.6 (the significance was at 0.01 level).

4.2 Test of Hypotheses

The hypothesized positive relationship between experiential learning and elaborating mindset (H1a) was supported as shown in Table 2 ($b = 0.375, p < 0.01$). H1b which predicted a positive relationship between experiential learning and implementing mindset was also supported as shown in Table 3 ($b = 0.239, p < 0.01$). The H2a, H2b, H2d proposed that innovativeness, risk-taking propensity, and proactiveness would strengthen the relationship between experiential learning and elaborating mindset, but these hypotheses were not supported as shown in Table 2 ($b = -0.08, p = 0.32$ for H2a; $b = 0.045, p = 0.501$ for H2b; $b = -0.027, p = 0.748$ for H2d). H2c predicted that need for achievement would act as a positive moderator between experiential learning and elaborating mindset. The finding was significant, but in the opposite direction as also shown in Table 2 ($b = -0.123, p = 0.043$).

We then depicted a pattern of interaction (e.g., Frazier et al., 2004; Jose, 2013; Bernardus et al., 2020) to explain how need for achievement moderates the positive relationship between experiential learning and elaborating mindset. In order to produce a pattern of interaction, we computed means of the moderating effect of need for achievement by hand computation guided by Jose (2013). Based on four mean scores in Table 4, we plotted the pattern of interaction, presented in Figure 2. High need for achievement (1 SD above the mean) was indicated by the solid line, whereas low need for achievement (1 SD below the mean) was indicated by the dash line (Jose, 2013; Bernardus et al., 2020).

Furthermore, we conducted simple slope analysis (Jose, 2013; Bernardus et al., 2020) to test the pattern of interaction (i.e., solid line and dash line in Figure 2). To conduct the simple slope analysis, we followed the hand computation suggested by Jose (2013). The solid line in Figure 2 shows that the positive relationship between experiential learning and elaborating mindset was weaker among individuals with a high need for achievement ($b = 0.252, SE = 0.085, p < 0.01$), whereas the dash line shows that the positive relationship between experiential learning and elaborating mindset was stronger among individuals with a low need for achievement ($b = 0.498, SE = 0.071, p < 0.01$).

H3a, H3b, H3c proposed that innovativeness, risk-taking propensity, and need for achievement would positively moderate the relationship between experiential learning and implementing mindset, but these hypotheses were not supported as shown in Table 3 ($b = 0.101, p = 0.16$ for H3a; $b = -0.005, p = 0.938$ for H3b; $b = -0.065, p = 0.231$ for H3c). H3d predicted that proactiveness would act as a positive moderator between experiential learning and implementing mindset. The finding was significant, but in the opposite direction as also shown at Table 3 ($b = -0.162, p = 0.035$).

As previously mentioned, we then computed means of the moderating effect of proactiveness as also shown in Table 4 and plotted a pattern of interaction as shown in Figure 3. High proactiveness (1 SD above the mean) was indicated by the solid line, whereas low proactiveness (1 SD below the mean) was indicated by the dash line (Jose, 2013; Bernardus et al., 2020). According to the simple slope analysis in Figure 3, the solid line shows that the positive effect of experiential learning on

implementing mindset was weaker among individuals with a high proactiveness, but it was not statistically significant ($b = 0.077$, $SE = 0.049$, $p > 0.05$), whereas the dash line in Figure 3 shows that the positive relationship between experiential learning and implementing mindset was stronger among individuals with a low proactiveness ($b = 0.401$, $SE = 0.038$, $p < 0.01$).

Table 2: Hierarchical Linear Regression on Elaborating Mindset (n = 313)

	Step 1	Step 2	Step 3	Step 4
Control Variables				
Gender	-0.024	0.002	0.027	0.103
Age	-0.367	-0.216	-0.133	-0.128
Origin of university	-0.154	-0.183	-0.146	-0.141
Focal Independent Variable				
Experiential Learning	--	0.513**	0.370**	0.375**
Moderator Variables				
Innovativeness	--	--	0.273**	0.231**
Risk-Taking Propensity	--	--	-0.048	-0.019
Need for Achievement	--	--	0.342**	0.328**
Proactiveness	--	--	-0.264**	-0.226**
Moderating Effects				
Experiential Learning x Innovativeness	--	--	--	-0.080
Experiential Learning x Risk-Taking Propensity	--	--	--	0.045
Experiential Learning x Need for Achievement	--	--	--	-0.123*
Experiential Learning x Proactiveness	--	--	--	-0.027
Constant				
	0.840	0.607	0.383	0.323
F	1.709	28.692**	26.386**	20.303**
R Square	0.016	0.271	0.410	0.448
R Square Change	--	0.255**	0.138**	0.038**

* $p < 0.05$; ** $p < 0.01$.

Table 3: Hierarchical Linear Regression on Implementing Mindset (n = 313)

	Step 1	Step 2	Step 3	Step 4
Control Variables				
Gender	-0.295**	-0.272**	-0.046	-0.020
Age	-0.154	-0.014	0.037	0.022
Origin of university	0.324	0.298	0.160	0.161
Focal Independent Variable				
Experiential Learning	--	0.475**	0.258**	0.239**
Moderator Variables				
Innovativeness	--	--	0.516**	0.499**
Risk-Taking Propensity	--	--	0.162**	0.180**
Need for Achievement	--	--	-0.006	-0.005
Proactiveness	--	--	-0.079	-0.040
Moderating Effects				
Experiential Learning x Innovativeness	--	--	--	0.101
Experiential Learning x Risk-Taking Propensity	--	--	--	-0.005
Experiential Learning x Need for Achievement	--	--	--	-0.065
Experiential Learning x Proactiveness	--	--	--	-0.162*
Constant	0.227	0.011	-0.224	-0.206
F	9.010**	32.812**	44.647**	31.259**
R Square	0.080	0.299	0.540	0.556
R Square Change	--	0.218**	0.241**	0.015*

* $p < 0.05$; ** $p < 0.01$.

Table 4: Means Generated by Hand Computation (Jose, 2013; Bernardus et al., 2020) of the Moderating Effects of Need Achievement and Proactiveness

	Low Experiential Learning	High Experiential Learning
High Need for Achievement	0.400	0.904
Low Need for Achievement	-0.504	0.493
Dependent Variable: Elaborating Mindset		
High Proactiveness	-0.323	-0.169
Low Proactiveness	-0.567	0.235
Dependent Variable: Implementing Mindset		

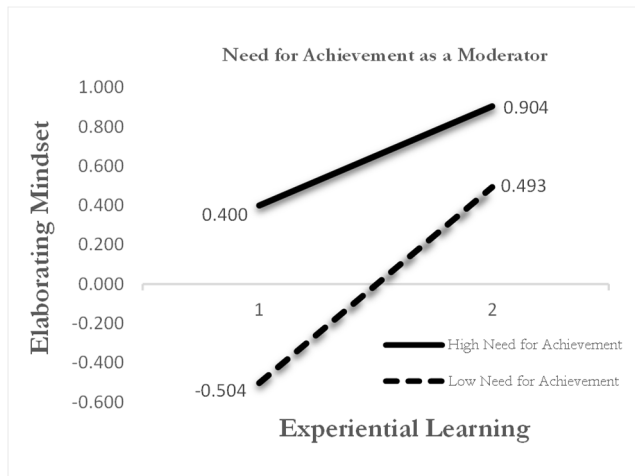


Figure 2: Relationship between Experiential Learning and Elaborating Mindset at High and Low Levels of Need for Achievement

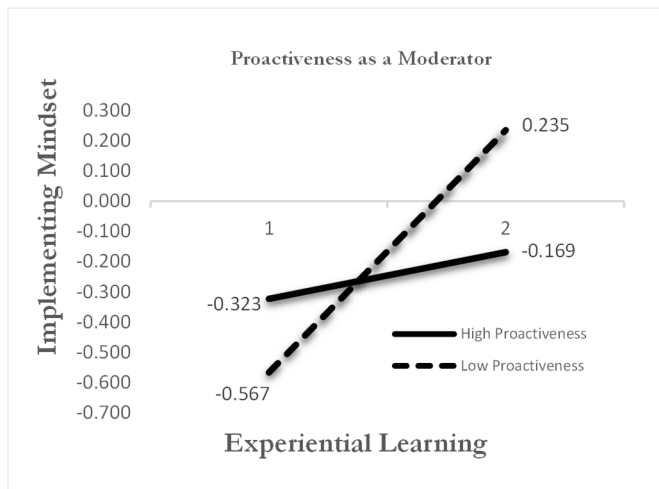


Figure 3: Relationship between Experiential Learning and Implementing Mindset at High and Low Levels of Proactiveness

5. Discussion, Implications, and Limitations

5.1 Discussion

As expected, our findings confirmed that experiential learning is positively related to elaborating mindset (H1a) and implementing mindset (H1b), which is in line with the findings of previous studies (e.g., Rodriguez & Lieber, 2020; Jackson et al., 2021; Lane & Roberts, 2021; Reynolds, 2021). Those findings indicated that individuals with a high involvement in experiential learning are better able to improve their entrepreneurial mindset.

However, our results of the hierarchical regression analysis (testing of H2 and H3) revealed surprising findings, which is similar with the findings of previous studies (e.g., Duffy & Lilly, 2013; Eschleman et al., 2015; Kim et al., 2015). They found a number of insignificant moderator variables as well as a number of significant moderator variables but in unexpected direction. We found the insignificant moderating effect of innovativeness, risk-taking propensity, and proactiveness on the relationship between experiential learning and elaborating mindset as well as the insignificant moderating effect of innovativeness, risk-taking propensity, and need for achievement on the relationship between experiential learning and implementing mindset. We also found the significant moderating effect of need for achievement on the relationship between experiential learning and elaborating mindset as well as the significant moderating effect of proactiveness on the relationship between experiential learning and implementing mindset, but both in the unexpected direction.

Innovativeness and risk-taking propensity did not have a significant moderating effect on the relationship between experiential learning and elaborating mindset, and between experiential learning and implementing mindset (H2a, H2b, H3a, and H3b were not supported). It indicates that innovativeness and risk-taking propensity mute those two relationships, in which the experiential learning may not develop the entrepreneurial mindset for individuals with a high innovativeness and a high risk-taking propensity (see Duffy & Lilly, 2013). This study found that the percentage of individuals with a high innovativeness was higher than those with a low innovativeness (54% vs 46%), similarly, the percentage of individuals with a high risk-taking propensity was higher than those with a low risk-taking propensity (55% vs 45%). Referring to the discussion from previous studies regarding the insignificant moderating effect (e.g., Duffy & Lilly, 2013; Eschleman et al., 2015), a possible reason for such a finding could be that the entrepreneurial mindset may not be a viable option for them because their innovativeness and their risk-taking propensity were already high. Therefore, high innovativeness and high risk-taking propensity may not moderate the relationship between experiential learning and entrepreneurial mindset, both elaborating mindset and implementing mindset.

Another possible reason that innovativeness and risk-taking propensity are “the most distinctive entrepreneurial characteristics” (p. 238) which distinguish between entrepreneurs and non-entrepreneurs (Hyrsky & Tuunanen, 1999). Those two entrepreneurial characteristics have also been the focus of previous studies (e.g., Hyrsky & Tuunanen, 1999; Mamun et al., 2017; McCarthy et al., 2018). Our study also found a relatively strong correlation between innovativeness and risk-taking propensity (see Table 1b). That is why, when innovativeness was found to have no moderating effect, similarly, risk-taking propensity did not have a moderating effect.

Proactiveness and need for achievement did not have a significant moderating effect on the relationship between experiential learning and elaborating mindset, and between experiential learning and implementing mindset, respectively (H2d and H3c were not supported). Similarly, it indicates that the experiential learning may not encourage the elaborating mindset for individuals with a high proactiveness, and the implementing mindset for individuals with a high need for achievement, respectively (see Duffy & Lilly, 2013). This study found that the percentage of individuals with a high proactiveness was higher than those with a low proactiveness (55% vs 45%), similarly, the percentage of individuals with a high need for achievement was higher than those with a low need for achievement (58% vs 42%). As previously mentioned regarding the insignificant

moderating effect (e.g., Duffy & Lilly, 2013; Eschleman et al., 2015), a possible explanation could be that the entrepreneurial mindset may not be a viable option for them because their proactiveness and their need for achievement were already high. Therefore, high proactiveness and high need for achievement may not moderate the relationship between experiential learning and elaborating mindset, and between experiential learning and implementing mindset, respectively.

The moderating effect of need for achievement was not in the expected direction; there was a stronger positive relationship between experiential learning and elaborating mindset among individuals with a low need for achievement compared to individuals with a high need for achievement (H2c was partially supported). Referring to the discussion from previous studies regarding the unexpected direction of the moderating effect (e.g., Duffy & Lilly, 2013; Eschleman et al., 2015), a possible reason for such a finding could be that it may be due to individuals with a low need for achievement. They are persons with a low achievement-oriented (see Duffy & Lilly, 2013; Huber et al., 2014; Eschleman et al., 2015). They are not motivated to be successful (Koh, 1996) or not to do well (Huber et al., 2014). Specifically, they are not encouraged to improve their skills, to complete their tasks, and to meet their challenges (Duffy & Lilly, 2013). Therefore, they may tend not only to improve their elaborating mindset with a high involvement in experiential learning but also to focus on enhancing their skills, completing their tasks, and meeting their challenges. Specifically, for individuals with a low need for achievement, experiential learning may play a role to encourage both elaborating mindset and need for achievement.

The moderating effect of proactiveness was also not in the expected direction; the positive relationship between experiential learning and implementing mindset was stronger only for individuals with a low proactiveness (H3d was partially supported). As previously mentioned regarding the unexpected direction of the moderating effect (e.g., Duffy & Lilly, 2013; Eschleman et al., 2015), a possible reason for such a finding could be that it may be due to individuals with a low proactiveness. They are relatively passive, in which “they react to, adapt to, and are shaped by their environments” (Bateman & Crant, 1993, p. 105). They fail to identify opportunities and to anticipate and prevent problems (Bateman & Crant, 1993; Sánchez, 2013). Therefore, they may tend not only to improve their implementing mindset with a high involvement in experiential learning but also to focus on identifying opportunities, and anticipating and preventing problems. Similarly, specifically for individuals with a low proactiveness, experiential learning may play a role to encourage both implementing mindset and proactiveness.

5.2 Theoretical and practical implications

This study extends the literature of experiential learning theory (Kolb, 2015) and Dweck’s implicit theory of intelligence (e.g., Vsetecka, 2018; Bernardus et al., 2022) for the context of higher education students who participate in entrepreneurship education. The synthesis of the two theories might be useful to understand the link between experiential learning and entrepreneurial mindset. In the context of entrepreneurship, the experiential learning is an important predictor of entrepreneurial mindset (see Bernardus et al., 2020). This study also extends the literature of entrepreneurial characteristics (Koh, 1996; Huarng & Yu, 2021) for the context of university, in which: (1) need for achievement moderates the positive relationship between experiential learning and elaborating mindset, and (2) proactiveness moderates the positive relationship between experiential learning and implementing mindset. Therefore, the presence of need for achievement and proactiveness is really considered in order to moderate (i.e., to weaken) the effect of experiential learning on entrepreneurial mindset.

Although innovativeness and risk-taking propensity did not moderate the positive relationship between experiential learning and entrepreneurial mindset, they are still possible to be re-examined in the future studies (see Bernardus et al., 2020). In addition, the entrepreneurial characteristics (i.e., innovativeness, risk-taking propensity, need for achievement, and proactiveness) also have a possibility to be verified as the dependent variables, whereas the entrepreneurial mindset, both

elaborating mindset and implementing mindset to be tested as the moderator variables.

This study has practical implications for entrepreneurship educators who are interested helping their students to develop the entrepreneurial mindset. Our study informs that their instructional design should be based on the experiential learning. Our study also provides an insight for entrepreneurship educators in identifying students who are more suitable to be involved in experiential learning program according to the entrepreneurial characteristics of their students (i.e., low need for achievement and low proactiveness).

5.3 Limitations and future research directions

There are limitations to this study and directions for future studies. *First*, our study used the cross-sectional design, in which the positive relationship between experiential learning and entrepreneurial mindset does not indicate the cause-and-effect relationship (Sekaran & Bougie, 2016; Bernardus et al., 2020). Therefore, the factorial design (Sekaran & Bougie, 2016) is needed to verify the cause-and-effect relationship between experiential learning and entrepreneurial mindset, in which the factorial design examines the main effect of experiential learning on entrepreneurial mindset as well as the interaction effects (i.e., the effects of experiential learning multiplied by each moderator variable) on entrepreneurial mindset. *Second*, the sample consisted of the students from four universities in East Java province of Indonesia. Therefore, the external validity of the findings needs to be examined among students from other universities and other provinces in Indonesia.

6. Conclusion

This study provides valuable insights about the significant moderating effect of entrepreneurial characteristics on the positive relationship between experiential learning and entrepreneurial mindset. Overall, the findings have partially supported the research hypotheses. We found the positive relationships between experiential learning and elaboration mindset, and between experiential learning and implementing mindset. However, need for achievement and proactiveness (i.e., low proactiveness) successfully acted as moderator variables, while innovativeness and risk-taking propensity were not successful.

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Appendix: Construct and associated items, mean, and standard deviation (SD)

Experiential Learning (Chavan, 2011)		Mean	SD
EL1	Interesting. (Saya merasa senang dalam mengikuti perkuliahan <i>entrepreneurship</i> .)	4.489	0.641
EL2	Satisfying. (Saya merasa puas dalam mengikuti perkuliahan <i>entrepreneurship</i> .)	4.348	0.736
EL3	Informative, obtained pertinent knowledge. (Perkuliahan <i>entrepreneurship</i> yang saya ikuti adalah informatif [misalnya, memberikan pengetahuan yang saya perlukan terkait <i>entrepreneurship</i>].)	4.428	0.686
EL4	Applicable to the real world and my own life. (Perkuliahan <i>entrepreneurship</i> yang saya ikuti dapat diterapkan dalam kehidupan sehari-hari.)	4.323	0.735
EL5	Learning processes were simple. (Proses perkuliahan <i>entrepreneurship</i> yang saya ikuti adalah sederhana dan mudah dimengerti.)	4.252	0.718
EL6	Helped to develop my professional skills. (Perkuliahan <i>entrepreneurship</i> yang saya ikuti dapat membantu saya untuk mengembangkan keterampilan saya.)	4.371	0.740
EL7	The learning process was pertinent to my self-development. (Proses perkuliahan <i>entrepreneurship</i> yang saya ikuti adalah relevan atau cocok untuk pengembangan diri saya.)	4.281	0.749
EL8	I felt active and involved. (Dalam menempuh perkuliahan <i>entrepreneurship</i> , saya terlibat secara aktif.)	4.099	0.832
EL9	I felt the course challenged me. (Perkuliahan <i>entrepreneurship</i> yang saya ikuti memberikan tantangan kepada saya [misalnya, tantangan untuk menemukan peluang bisnis].)	4.399	0.705
EL10	I liked participating in these activities. (Saya merasa senang untuk berpartisipasi dalam proses perkuliahan <i>entrepreneurship</i> .)	4.367	0.709
EL11	Observed internal changes in confidence levels and knowledge. (Perkuliahan <i>entrepreneurship</i> yang saya ikuti dapat meningkatkan pengetahuan dan rasa percaya diri saya.)	4.272	0.738
EL12	Experiential activities helped in integrating course material. (Aktivitas-aktivitas dalam perkuliahan <i>entrepreneurship</i> membantu saya dalam mengintegrasikan materi perkuliahan.)	4.211	0.721
EL13	I felt the course required me to exercise independent judgment in evaluating text book theories. (Perkuliahan <i>entrepreneurship</i> yang saya ikuti dapat melatih saya untuk menilai secara mandiri buku teks atau bahan perkuliahan [misalnya, buku teks yang dibutuhkan dan yang tidak dibutuhkan].)	3.984	0.857
EL14	I learned things from this activity that I did not know earlier. (Dalam perkuliahan <i>entrepreneurship</i> , saya mempelajari sesuatu yang sebelumnya tidak saya ketahui.)	4.364	0.761
EL15	I am glad I took the course. (Saya merasa senang karena telah memprogram dan menyelesaikan perkuliahan <i>entrepreneurship</i> .)	4.447	0.697
Elaborating Mindset (Mathisen & Arnulf, 2013)		Mean	SD
ELAM1	I'm considering whether I have the time to run my own business. (Saya mempertimbangkan apakah saya mempunyai waktu, ketika saya memulai untuk menjalankan suatu bisnis.)	4.374	0.682
ELAM2	I'm considering whether I have the opportunity financially to start my own business. (Saya mempertimbangkan apakah saya mempunyai peluang secara finansial [misalnya, ada dukungan keuangan dari keluarga/kolega/lembaga keuangan], ketika saya memulai untuk menjalankan suatu bisnis.)	4.342	0.748
ELAM3	I consider whether the timing to start my own business is right. (Saya mempertimbangkan kapan waktu yang tepat, ketika saya memulai untuk menjalankan suatu bisnis.)	4.383	0.703
ELAM4	I'm looking for both positive and negative information about starting my own business. (Ketika saya memulai untuk menjalankan suatu bisnis, saya mencari informasi baik positif maupun negatif mengenai bagaimana menjalankannya.)	4.511	0.641
Implementing Mindset (Mathisen & Arnulf, 2013)		Mean	SD
IMPLM1	I have decided to start my own business. (Saya telah memutuskan untuk memulai menjalankan suatu bisnis.)	4.019	1.000
IMPLM2	When I perceive an opportunity, I will size up the opportunity and start my own business. (Ketika saya menemukan suatu peluang bisnis, saya menilai peluang itu dan menindaklanjuti dengan menjalankan bisnis itu.)	4.157	0.815
IMPLM3	I have a plan/strategy for when to start my own business. (Saya sudah menyiapkan rencana/strategi kapan waktu yang tepat untuk menjalankan suatu bisnis.)	3.994	0.961
IMPLM4	I have a plan/strategy for how to start my own business. (Saya sudah menyiapkan rencana/strategi bagaimana menjalankan suatu bisnis.)	4.058	0.932
Innovativeness (Mueller & Thomas, 2001)		Mean	SD
INNOV1	I often surprise people with my novel ideas. (Saya sering mengejutkan orang-orang lain dengan ide-ide baru saya.)	3.719	0.879
INNOV2	People often ask me for help in creative activities. (Orang-orang lain sering meminta saya untuk membantu mereka dalam kegiatan yang kreatif [misalnya, menemukan peluang bisnis].)	3.789	0.937
INNOV3	I prefer work that requires original thinking. (Saya lebih suka pekerjaan yang membutuhkan pemikiran original.)	3.978	0.810
INNOV4	I like to experiment with various ways of doing the same thing. (Dalam mengerjakan hal yang sama, saya suka bereksperimen dengan mencoba berbagai cara.)	4.038	0.808
Risk-Taking Propensity (Zhang et al., 2019)		Mean	SD
RISK1	Taking risks is an important part of my life. (Mengambil risiko adalah bagian penting dalam hidup saya.)	3.760	0.942
RISK2	I commonly make risky decisions. (Saya biasanya membuat keputusan yang berisiko.)	3.546	0.993
RISK3	I am a believer of taking chances. (Saya yakin terhadap tindakan mengambil risiko.)	3.719	0.953
RISK4	I am attracted, rather than scared, by risk. (Saya tertarik pada risiko, bukannya takut terhadap risiko.)	3.610	1.023
Need for Achievement (Lang & Fries, 2006)		Mean	SD
NACH1	I like situations, in which I can find out how capable I am. (Saya menyukai situasi, di mana saya dapat mengetahui seberapa mampu saya.)	4.230	0.728
NACH2	When I am confronted with a problem, which I can possibly solve, I am enticed to start working on it immediately. (Ketika saya dihadapkan pada suatu masalah yang mungkin bisa saya pecahkan, saya terpacu untuk segera memecahkannya.)	4.252	0.762
NACH3	I enjoy situations, in which I can make use of my abilities. (Saya menikmati situasi di mana saya dapat menggunakan kemampuan saya.)	4.288	0.738
NACH4	I am appealed by situations allowing me to test my abilities. (Saya tertarik dengan situasi yang memungkinkan saya untuk menguji kemampuan saya.)	4.147	0.779
NACH5	I am attracted by tasks, in which I can test my abilities. (Saya tertarik dengan tugas, di mana saya dapat menguji kemampuan saya.)	4.096	0.791
Proactiveness (Bateman & Crant, 1993)		Mean	SD
PROACT1	I enjoy facing and overcoming obstacles to my ideas. (Saya senang untuk menghadapi dan mengatasi rintangan yang menghalangi ide-ide saya.)	3.930	0.867
PROACT2	I excel at identifying opportunities. (Saya unggul dalam mengidentifikasi peluang.)	3.639	0.866
PROACT3	If I believe in an idea, no obstacle will prevent me from making it happen. (Jika saya percaya pada sebuah ide, tidak ada halangan yang menghalangi saya untuk mewujudkannya.)	3.821	0.895
PROACT4	I love to challenge the status quo. (Saya suka menantang <i>status quo</i> [kondisi yang ada atau berlangsung saat ini].)	3.431	0.853
PROACT5	I can spot a good opportunity long before others can. (Saya bisa melihat peluang yang bagus jauh sebelum orang lain melihatnya.)	3.530	0.895

Note. Sentences in brackets are the items in the Indonesian adaptation.