

Original Article

An Empirical Investigation of Internal Locus of Control, Entrepreneurial Self-Efficacy, Entrepreneurial Education, and Entrepreneurial Intention

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Received Date: 21 July 2024

Revised Date: 04 August 2024

Accepted Date: 10 August 2024

Published Date: 13 August 2024

Abstract: This study proposes the relationship between internal locus of control, entrepreneurial self-efficacy, entrepreneurial education, and entrepreneurial intention. Internal locus of control, entrepreneurial self-efficacy, and entrepreneurial education act as independent variables for entrepreneurial intention as a dependent variable. Entrepreneurial education also functions as a moderator. A total of 208 student respondents were involved in this study. Results showed that there is a positive influence of internal locus of control, entrepreneurial self-efficacy, and entrepreneurial training on entrepreneurial intention. Formal entrepreneurial education embedded in university curricula and entrepreneurial education through entrepreneurship seminars were positively related to entrepreneurial intention. Additionally, it was discovered that the association between self-confidence in entrepreneurship and intention was moderated by entrepreneurial education. The study's theoretical as well as practical implications are examined. This essay concludes with limitations and recommendations for more research.

Keywords: Internal Locus of Control, Entrepreneurial Self-Efficacy, Entrepreneurial Education, Entrepreneurial Intention.

I. INTRODUCTION

The imbalance between the number of the workforce and employment opportunities is one of the several factors causing the high unemployment rate in Indonesia. This can be seen through the statistical data, which shows that the number of the workforce has increased, while the number of working people has decreased. On the other hand, in August 2020, the number of working people was 128.45 million, a decrease of 0.31 million from August 2019. According to the latest data, the open unemployment rate for February 2024 was 4.82% (BPS, 2024).

The unemployment problem requires a solution. One of the solutions to this problem is through various programs that increase entrepreneurial intention. Entrepreneurship is a solution and a promising career choice for young people. The younger generation is encouraged to become entrepreneurs because this profession provides extensive opportunities for them to develop their potential. Entrepreneurial intention is the level of a person's tendency to pursue a career as an entrepreneur. Academics in the field of entrepreneurship have stated that entrepreneurial intention is influenced by internal and external factors (Javalgi et al., 2018). This study attempts to investigate internal locus of control and entrepreneurial self-efficacy as internal factors, and entrepreneurship training organized by universities as external factors. Internal locus of control characterizes that a person believes that he/she (not the environment) will determine who he/she is. Entrepreneurial self-efficacy is the extent of a person's belief that one is able to carry out activities as an entrepreneur (Boyd & Vozikis, 1994; Chen et al., 1998). Education is one of the entities that should participate in fostering this intention. Entrepreneurship learning methods begin to be provided from early childhood education to university. University students are provided with entrepreneurship education both in theory and in real business practice. The hope of providing entrepreneurship education is the growth of entrepreneurial intention from an early age.

Figure 1 shows the research model. Internal locus of control, entrepreneurial self-efficacy, and entrepreneurship education are positioned as independent variables. The role of entrepreneurial education in moderating the effects of internal locus of authority and self-worth as an entrepreneur on entrepreneurial education is also investigated. Previous studies have not expanded on entrepreneurship courses organized by educational organizations, despite the fact that the influences of the internal axis of authority and self-confidence as an entrepreneur on entrepreneurship intent have been previously proven. More specifically, universities may need to encourage their students to attend various entrepreneurship trainings and seminars that parties outside the campuses hold. This research is significant because researchers, educators, and practitioners in the field of entrepreneurship may understand the significance of entrepreneurial education together with these internal factors (internal locus of control and entrepreneurial self-efficacy) in encouraging entrepreneurial intention.



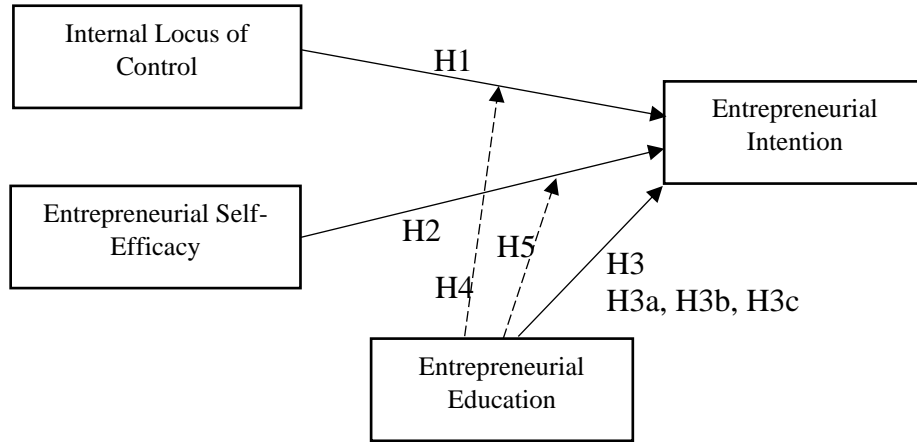


Fig. 1 Research Model

II. LITERATURE REVIEW AND HYPOTHESES

A) Internal Locus of Control

Locus of control is a person's ability to know whether their achievement is influenced by the external environment or themselves (Abid et al., 2016). Julian B. Rotter, in 1966, distinguished locus of control into two categories, both the exterior and interior loci of control (Lange & Tiggemann, 1981). Someone who has an internal center of control believes that he/she is the one who controls everything that happens to him/her. In contrast, a person with an external locus of control believes that chance, fate, and external circumstances determine everything that happens to him/her. Students who have internal locus of control try to face challenges rationally and take full responsibility for all the results they get (Naik, 2015). On the other hand, students who have an external locus of control tend to feel anxious or ignore responsibility for the results they obtain because they think that efforts to obtain good grades or pass exams are more influenced by external forces (Sujadi, 2020). According to Abid et al. (2016), the internal locus of control is often associated with proactive behavior, whereas the external locus of control is often related to reactive and passive behavior.

B) Entrepreneurial Self-Efficacy

Bandura (1986) states self-efficacy is motivation and cognitive ability to perform a certain action in order to achieve a level of performance, especially academic achievement. Lev et al. (2018) found that higher self-efficacy has been proven to increase confidence and optimism in facing difficult situations, which impacts achieving maximum performance for both lecturers and students. In some studies, self-efficacy is combined with other factors, such as active involvement and locus of control, to measure academic performance achievement (Clark, 2017). Similarly, habits and active participation in class lessons as indicators of self-efficacy are positively correlated with increased academic achievement and expectations of future success (Andres, 2020). Entrepreneurial self-efficacy is a construct developed to measure the same thing, but specifically in the field of entrepreneurship. This variable measures whether an entrepreneur believes in his/her abilities and the ability to finish a variety of jobs and undertakings (Boyd & Vozikis, 1994). Thus, entrepreneurial self-efficacy may show the extent of an entrepreneur's confidence and attitude toward overcoming various obstacles or difficulties to be successful (Gist, 1987; Gist & Mitchell, 1992). Several studies show that entrepreneurial self-efficacy can be an accurate predictor for the growth of interest in entrepreneurship and increasing the performance of the business being run (Caines et al., 2019; Hmieleski & Corbett, 2008).

C) Entrepreneurial Education

Many educational institutions have organized entrepreneurship education to instill a change in the mindset of study participants and encourage them to become active entrepreneurs after graduating from the schools. This is in line with the increasing public awareness of the important role of entrepreneurship in the national economy, especially those originating from innovation, job creation, and efficiency (Babatunde & Durowaiye, 2014). Gyamfi (2014) found that entrepreneurs who emerged from the entrepreneurship education or training they had attended were able to create 27 million jobs in the US in the period 1980-1995. Thus, fostering an entrepreneurial culture among the younger generation in order to influence their decision to pursue an entrepreneurial career is the primary objective of entrepreneurship education (Deakins et al., 2005).

D) Entrepreneurial Intention

According to Garba et al. (2014), entrepreneurial intention is a person's desire or willingness to start a business. This also means that someone interested in entrepreneurship tasks has the behavior of an entrepreneur, is able to work independently, and is ready to establish a new business or company (Dohse & Walter, 2010). Without a strong will, interest, and determination to

become an entrepreneur, someone with talent or potential will not necessarily be willing to become an entrepreneur (Muhammed, 2009). In other words, intention in entrepreneurship is able to measure the level of behavior and willingness to engage in entrepreneurial tasks (Krueger Jr, 2000). Several studies have shown factors that have the potential to increase interest in entrepreneurship, including personality traits (Owoseni, 2014), values, attitudes, and beliefs (Gasse & Tremblay, 2011), support in the form of education and networking (Amos et al., 2015), self-efficacy (Jekwu, 2016), creativity (Agbim et al., 2013), gender, and age (Deh et al., 2013).

E) Internal Locus of Control and Entrepreneurial Intention

Scholars have suggested that entrepreneurial intention may be influenced by external and internal factors (Amos et al., 2015; Owoseni, 2014). One internal factor that influences it is the internal locus of control (Hadi et al., 2023; Molino et al., 2018). Someone with an internal locus of control realizes that they influence the growth of entrepreneurial intention. Internal locus of control can increase self-efficacy in the business learning process. Self-efficacy will strengthen a person's interest in entrepreneurship by deploying all of his/her abilities or skills and ultimately forming entrepreneurial behavior (Indarti & Kristiansen, 2003). So, the following hypothesis in this study is:

H1: Internal locus of control is positively associated with entrepreneurial intention.

F) Entrepreneurial Self-Efficacy and Entrepreneurial Intention

A noteworthy distinction was observed between students with high and low levels of self-efficacy regarding their intention to pursue entrepreneurship, according to the number of students examined by Ojewumi et al. (2018): the greater the self-efficacy, the greater the desire to become entrepreneurs. This fact shows that high entrepreneurial self-efficacy may be significant in the development of entrepreneurial intention among these students. The same results were also shown by a study on graduates of a university in Nigeria, which found that respondents with higher entrepreneurial self-efficacy have significantly higher entrepreneurial intentions compared to respondents with lower entrepreneurial self-efficacy (Jekwu, 2016). Ali et al. (2010), who studied students at the Islamic University of Bahawalpur, Pakistan, found that entrepreneurial self-efficacy had a positive influence on entrepreneurial intention. Teenagers who have higher entrepreneurial self-efficacy were found to have higher entrepreneurial intentions (Binnewies & Gromer, 2012). So, the following hypothesis is formed:

H2: Entrepreneurial self-efficacy is positively related to entrepreneurial intention.

G) Entrepreneurial Education and Entrepreneurial Intention

In contrast to education in general, entrepreneurial education is specifically organized to develop thinking patterns and competencies necessary to become an entrepreneur. Abebe (2015) argues that entrepreneurial education is important to study in college because it will change the orientation of graduates from job seekers to job creators. A university is, therefore, the right place to foster students' entrepreneurial spirit. A university has a very important role in developing students' interest and efforts in entrepreneurship so that when they graduate, they are able to develop new businesses (Anjum et al., 2020).

Universities can provide support in a certain way by instilling the skills and knowledge needed to create and run a business. Even if someone already has the talent to be an entrepreneur, their character and competence will be difficult to develop if they are not equipped with education or training such as risk-taking, innovation skills, and proactive actions (Olugbola, 2017). A positive attitude in the form of a strong desire and interest in entrepreneurship will increase motivation and the ability to act so that entrepreneurs will explore various opportunities and manage available resources. Lack of skills, knowledge, attitudes, and interest in entrepreneurship can be a barrier for someone, so they are reluctant to start a business because they are afraid of failure (Choo & Wong, 2006).

Several studies show a positive correlation between entrepreneurial education and interest in entrepreneurship (Singh Sandhu et al., 2011). A study conducted by Olugbola (2017) shows that students who participate in entrepreneurial education or training programs tend to be more interested in starting a business compared to non-participants. According to Anjum et al. (2018), entrepreneurial education in the university education system plays an important role in fostering students' entrepreneurial intentions (i.e., formal entrepreneurial education). Furthermore, attending entrepreneurship training sessions and seminars held by outside parties can augment the benefits of education provided by universities (i.e., informal entrepreneurial education). Therefore, the following hypotheses are formed:

H3: Entrepreneurial education is positively associated with entrepreneurial intention.

H3a: Entrepreneurial education embedded in universities is positively associated with entrepreneurial intention.

H3b: Entrepreneurial education in the form of entrepreneurship training is positively associated with entrepreneurial intention.

H3c: Entrepreneurial education in the form of entrepreneurship seminar is positively associated with entrepreneurial intention.

H) Moderating Effect of Entrepreneurial Education

The literature states that entrepreneurship training has an important role in fostering interest in entrepreneurship (Abebe, 2015). This study predicts that entrepreneurial education will moderate the influences of internal locus of control and entrepreneurial self-efficacy. If students have the internal locus of control attributes and receive entrepreneurial education formally and informally, their intention to entrepreneurship will be stronger. Entrepreneurial education will transfer self-confidence into the real action that a person takes to prepare themselves as an entrepreneur (Idris et al., 2018). The influence of entrepreneurial self-efficacy will also be strengthened if students receive entrepreneurial education during their studies at universities. Students who have high entrepreneurial self-efficacy and obtain sufficient entrepreneurial education will have a stronger drive to become entrepreneurs (Kakouris et al., 2023). So, this research formulates the following hypotheses:

H4: Entrepreneurial education moderates the relationship between the internal locus of control and entrepreneurial intention in such a way that the effect of the internal locus of control on entrepreneurial intention is stronger in students with more intensive education acquired rather than otherwise.

H5: Entrepreneurial education moderates the relationship between entrepreneurial self-efficacy and entrepreneurial intention in such a way that the effect of entrepreneurial self-efficacy on entrepreneurial intention is stronger in students with more intensive education acquired rather than otherwise.

III. METHODS

Respondents were university students in the Special Region of Yogyakarta (DIY). The online survey method was chosen. A total of 250 student respondents were involved in this research. The total response was 208 students, and all of them could be used for analysis. Sixty-one percent (61%) were women. The minimum age of respondents was 18 years, and the maximum was 32 years, with an average age of 22 years. Based on the major taken, 48% of students were majoring in business and management (the rest were majoring outside this major), and most were studying in the 8th semester (51%). Respondents who reported having received entrepreneurship courses amounted to 67%, and 63% of them had attended entrepreneurship training with a minimum duration of 1 month. In addition, only 39% of them had joined entrepreneurship seminars.

Other scholars have validated all study measurements used in this research. An eleven-item scale of internal locus of control proposed by Rotter (1966) was employed. The sample item is "If I set a reasonable goal, I am likely to achieve it with hard work and commitment." A six-item scale from De Noble et al. (1999) was used to measure entrepreneurial self-efficacy. The sample item is "I can work productively under continuous stress, pressure, and conflict." Entrepreneurial intention was measured by a twenty-item scale proposed by Linan (2008). The sample item is "Starting a firm and keeping it viable would be easy for me." Respondents responded on a five-point Likert scale (ranging from strongly disagree to strongly agree). Entrepreneurial education was categorized into three namely: (1) formal education embedded in university curricula, (2) informal entrepreneurial education in the form of entrepreneurship training, and (3) informal entrepreneurial education in the form of entrepreneurship seminars. Respondents were asked if they had attended each of the three types of education. Each *Yes* response was coded as 1 and each *No* response was coded as 0. Entrepreneurial education was expressed by the mean score of the three responses. For example, if a respondent answered *yes*, *yes*, and *no* for three questions, the mean score was $(1 + 1 + 0) / 3 = 0.67$. Finally, gender (1 = men, 2 = women) and age (in years) were incorporated as controls.

IV. RESULTS AND DISCUSSION

A) Validity and Reliability of Study Measurements

Before the data was used for hypotheses testing, the validity of the measurements was evaluated first to ensure that all variable items were suitable for measuring those variables. Also, all variables used have an acceptable level of internal consistency, i.e., reliability. At the sample size (i.e., 208), a question item was considered valid if it had a loading of at least 0.40 (Hair et al., 2014). Four questions had a weight factor of less than 0.40 (ILC1, ILC4, ILC5, and ILC8), thus they were dropped. However, ILC11 was maintained because the loading was approaching the required value. All items of entrepreneurial self-efficacy were valid. Likewise, all questions of entrepreneurial intention were also valid. The reliability test only included valid questions. Cronbach's alpha was used to measure the level of reliability of a variable, namely a minimum Cronbach's alpha value of 0.60. As seen in Table 1, all variables could be declared reliable because they exceed 0.60 (Algifari, 2017). Table 1 presents the results of the validity and reliability assessments.

Table 1: Results of Validity and Reliability Assessment

Item Code	Factor Loading	Cronbach's Alpha
ILC1	Dropped	0.61
ILC2	0.51	
ILC3	0.42	
ILC4	Dropped	
ILC5	Dropped	
ILC6	0.71	

Item Code	Factor Loading	Cronbach's Alpha
ILC7	0.56	
ILC8	Dropped	
ILC9	0.75	
ILC10	0.41	
ILC11	0.39	
ESE1	0.46	0.82
ESE2	0.70	
ESE3	0.83	
ESE4	0.77	
ESE5	0.84	
ESE6	0.79	
EIT1	0.52	0.95
EIT2	0.77	
EIT3	0.68	
EIT4	0.82	
EIT5	0.80	
EIT6	0.79	
EIT7	0.76	
EIT8	0.61	
EIT9	0.77	
EIT10	0.61	
EIT11	0.64	
EIT12	0.78	
EIT13	0.79	
EIT14	0.62	
EIT15	0.75	
EIT16	0.69	
EIT17	0.76	
EIT18	0.63	
EIT19	0.81	
EIT20	0.63	

Note: ILC = Internal Locus of Control, ESE = Entrepreneurial Self-Efficacy, EIT = Entrepreneurial Intention.

B) Correlation Analysis

Correlation analysis evaluates the relationship between one variable and another (bivariate correlation). As seen in Table 2, entrepreneurial intention was positively correlated with internal locus of control (0.20, $p < 0.01$), entrepreneurial self-efficacy (0.53, $p < 0.01$), and entrepreneurship education (0.31, $p < 0.01$). Entrepreneurial education was positively correlated with entrepreneurial self-efficacy (0.18, $p < 0.05$). Finally, entrepreneurial self-efficacy was positively correlated with internal locus of control (0.34, $p < 0.01$).

Table 2: Means, Standard Deviations, and Correlations

Variable	Mean	SD	1	2	3	4	5
1. Gender (1 = men, 2 = women)	0.37	0.49	-				
2. Age (in years)	21.97	1.47	-0.18**	-			
3. Internal locus of control	3.68	0.52	0.08	-0.17*	-		
4. Entrepreneurial self-efficacy	3.88	0.59	-0.05	-0.01	0.34**	-	
5. Entrepreneurial education	0.56	0.36	-0.05	0.03	0.11	0.18*	-
6. Entrepreneurial intention	3.95	0.63	-0.17*	0.03	0.20**	0.53**	0.31**

Note: N = 208, * $p < 0.05$, ** $p < 0.01$ (two-tailed).

C) Regression: Assessing Direct Relationships

H1 predicts the intention to start a business is positively impacted by its internal position of control. Table 3 shows that the effect of internal locus of control on entrepreneurial intention is 0.22 ($p < 0.01$, Model 2). H1 was supported. H2 states that entrepreneurial self-efficacy will influence intention in entrepreneurship. The relationship between intent to be an entrepreneur and self-efficacy is 0.52 ($p < 0.001$, Model 3). Therefore, H2 was supported. H3 predicts that entrepreneurial education has a positive effect on interest in entrepreneurship. The results indicated that the regression coefficient of entrepreneurial education on entrepreneurial intention was 0.30 ($p < 0.001$, Model 4). Therefore, H3 was supported. Model 5 included all three independent variables simultaneously. The intention to pursue entrepreneurship was significantly influenced by self-confidence in

entrepreneurship. Entrepreneurial education was still influential, although it weakened. The influence of the internal locus of control was no longer significant. Finally, entrepreneurial formal education, entrepreneurship training, and entrepreneurship seminars were regressed on entrepreneurial intention (Model 6). The results demonstrated that only entrepreneurship training did not have a significant effect on entrepreneurial intention. Therefore, H3a and H3c were supported, but H3b was not.

Table 3: Direct Effect Testing Results

Variable	Entrepreneurial Intention					
	Model 1	Model 2 (H1)	Model 3 (H2)	Model 4 (H3)	Model 5	Model 6 (H3a, b, c)
Gender (1 = men, 2 = women)	-0.17*	-0.19**	-0.15*	-0.16*	-0.14*	-0.16*
Age (in years)	0.00	0.04	0.01	-0.01	0.01	-0.01
Internal locus of control		0.22**			0.03	
Entrepreneurial self-efficacy			0.52***		0.47***	
Entrepreneurial education				0.30***	0.22***	
Formal education						0.16*
Entrepreneurship training						0.10
Entrepreneurship seminar						0.16*
F	3.21*	5.84**	29.18***	9.52***	21.55***	5.75***
R ²	0.03	0.08	0.30	0.12	0.35	0.13
Adjusted R ²	0.02	0.07	0.29	0.11	0.33	0.10

Note: N = 208, * p < 0.05, ** p < 0.01, *** p < 0.001.

D) Regression: Assessing Moderating Relationships

The moderating effect of entrepreneurial education was examined by the sample-splitting method (Whisman & McClelland, 2005). A moderating effect exists when there is a significant difference in effect patterns between data sets. The data was split based on the mean of entrepreneurial education, i.e., the mean was 0.56. A score below this value was coded as 0 (N = 96). A score above this value was coded as 1 (N = 112). H4 predicts that entrepreneurial education moderates the influence of internal locus of control on entrepreneurial intention; namely, for respondents who have received intensive entrepreneurial education, the internal sphere of authority has a greater impact on entrepreneurial education. Models 6 and 7 show that the effect of internal locus of control on entrepreneurial intention in the low-education group was 0.14 (insignificant). The effect of the same path in the high education group was 0.24 (p < 0.05). The moderating effect was demonstrated. H4 was supported. H5 states that entrepreneurial education modifies the relationship between intent to be entrepreneurial and entrepreneurial self-efficacy; namely, for respondents who have received intensive entrepreneurial education, the influence of entrepreneurial self-efficacy on entrepreneurial intention is stronger. The results show that although the effect of entrepreneurial self-efficacy in the high-education group was stronger (0.54, p < 0.001, Model 8), it did not show a significant difference as compared to that produced in the low-education group (0.42, p < 0.001, Model 9). H5 was not supported.

Table 4: Moderating Effect Testing Results

Variable	Entrepreneurial Intention			
	Model 6 (H4, N _{Low} = 96)	Model 7 (H4, N _{High} = 112)	Model 8 (H5, N _{Low} = 98)	Model 9 (H5, N _{High} = 112)
Gender	-0.26*	-0.12	-0.23*	-0.08
Age	0.12	0.15	0.07	0.10
Internal locus of control	0.14	0.24*		
Entrepreneurial self-efficacy			0.42***	0.54***
F	2.54**	3.83*	10.64***	17.97***
R ²	0.10	0.10	0.26	0.33
Adjusted R ²	0.07	0.07	0.23	0.31

Note: N = 208 (all respondents), * p < 0.05, ** p < 0.01, *** p < 0.001.

This research reveals several findings that are important to theoretical development, especially it validates the relationships studied by prior works. First, the rise in entrepreneurial intention is influenced by the internal sense of authority and self-confidence in entrepreneurship. (Binnewies & Gromer, 2012; Molino et al., 2018). Second, overall entrepreneurial education really helps students develop their entrepreneurial intentions. Third, the findings reveal that formal entrepreneurial

education arranged by universities and participation in entrepreneurship seminars are important factors to develop the intention. Fourth, the study shows the ability of entrepreneurial education to strengthen the effect of internal locus of control on entrepreneurial intention.

For practitioners, this research can provide a perspective for educators, educational activists, and higher education policy formulators to think deeply about the design and implementation of effective learning methods with entrepreneurship content. Elaborating on these three independent variables, even though self-efficacy as an entrepreneur and the inner sense of authority are internal factors, academic institutions have a role in growing them. For example, to optimize self-efficacy, universities must teach intellectual skills to encourage personal development, self-confidence, and self-management abilities. Although entrepreneurial education does not moderate the relationship between entrepreneurial self-efficacy and entrepreneurial education, this variable can moderate the relationship between internal locus of control and entrepreneurial intention. Therefore, it can be concluded that personal attributes that support interest in entrepreneurship will be more optimal if universities facilitate their students with classroom learning that is in accordance with the curricula and activities outside the curricula. Universities can encourage their students to attend entrepreneurship seminars, workshops, and talk shows that can be well-combined with classroom learning. Collaboration with external parties to develop entrepreneurship-focused curricula and carry out entrepreneurship-themed activities will increase the effectiveness of the efforts to develop stronger entrepreneurial intention.

This research has limitations. The use of a single-rater method is the main weakness of this study. Even though students were very competent in filling in all the statement items in the variables, for further research, the parents should be involved in assessing their children's entrepreneurial intentions. These two sources can be used in the analysis to reduce the possibility of common method variance (CMV). The questionnaire can be completed in class so researchers can guide respondents, thus improving the quality of the data. Future research could focus on training outside of higher education and learning that originates in the home environment (parents, siblings) and the surrounding environment (neighbourhood entrepreneurship atmosphere). Investigation of various environmental scopes will have different learning influences on entrepreneurial intention.

V. CONCLUSION

The current study proposes a model of the internal sense of control, self-confidence in entrepreneurship, and training for entrepreneurship. Entrepreneurial education consists of formal entrepreneurial education arranged by universities and two informal ones; namely, entrepreneurship training and education that is held by external parties. The findings suggest that internal locus of control, entrepreneurial self-efficacy, and entrepreneurial education may be important to the enhancement of students' entrepreneurial intention. Formal entrepreneurial education and entrepreneurship seminars can promote this intention. Lastly, entrepreneurial education can examine the connection between the desire to start a business and the internal point of authority.

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