

Entrepreneurial intention among university students: a theory of planned behavior perspective

ARTICLE INFORMATION

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ABSTRACT

This study examines the effects of attitude, subjective norm, entrepreneurship education, and behavioral control on entrepreneurial intention among students at a public university in Indonesia. Using a quantitative survey design with a purposive sampling technique, data were collected from 430 student respondents through a structured questionnaire. Data were analyzed using Structural Equation Modeling (SEM) with the SmartPLS 3.0 software. The results show that (1) attitude has a significant positive effect on entrepreneurial intention, (2) subjective norm has a significant positive effect on entrepreneurial intention, (3) entrepreneurship education has no significant effect on behavioral control, and (4) behavioral control has no significant effect on entrepreneurial intention. These findings indicate that attitude plays a central role in shaping students' entrepreneurial intention, while family and social support, reflected in subjective norm, also encourages the courage to start a business. Although entrepreneurship education is delivered as a compulsory university course intended to strengthen students' entrepreneurial knowledge, it did not translate into stronger behavioral control or intention in this context. These results extend the Theory of Planned Behavior within the setting of Indonesian university students and suggest that attitudinal and social factors are more influential than formal entrepreneurship education in fostering entrepreneurial intention, with implications for the design of entrepreneurship curricula in higher education.

Keywords: *Theory of planned behavior¹; entrepreneurship education²; entrepreneurial intention³; attitude⁴; subjective norm⁵*

INTRODUCTION

Unemployment is an undesirable condition, yet it remains a persistent problem across many countries, including Indonesia. The rising number of unemployed individuals in Indonesia has direct implications for national economic growth and represents an issue that urgently needs to be addressed (Franita, 2016). One government initiative aimed at increasing the number of entrepreneurs was the Science and Technology for Entrepreneurship (IbK) grant program administered by the Ministry of Research, Technology, and Higher Education. This program has since been renamed the Entrepreneurship Development Program (PPK), one of several community-service schemes implemented by higher education institutions in Indonesia. In this respect, universities function as educational institutions responsible for preparing human resources to work and perform professionally within their respective fields of competence (Sujatna & Budi, 2019).

According to Wiratno (2012), the implementation of entrepreneurship education in higher education institutions has been carried out gradually and continuously. Entrepreneurship education at the university level has increasingly become a subject of discussion through seminars, workshops, and lesson-learned sessions that feature successful alumni entrepreneurs as benchmarks. Entrepreneurial intention is an important phenomenon among students, since individuals who possess self-confidence and courage tend to find it easier to pursue entrepreneurial work. Andika and Madjid (2012) define attitude as a learned tendency to respond favorably or unfavorably toward an object. In the

entrepreneurial context, attitude represents an individual's response—whether favorable or unfavorable—toward engaging in entrepreneurial behavior.

Despite the growing attention given to entrepreneurship education and its expected role in cultivating entrepreneurial intention, empirical evidence on how attitude, subjective norm, entrepreneurship education, and behavioral control jointly shape students' entrepreneurial intention—particularly within the framework of the Theory of Planned Behavior—remains limited in the context of Indonesian regional universities. Unlike prior TPB-based studies in this setting, which typically model entrepreneurship education and behavioral control as parallel, independent predictors of intention, this study contributes by positioning entrepreneurship education as an antecedent of behavioral control within a single integrated structural model, thereby testing directly whether a compulsory university course translates into stronger perceived behavioral control and, in turn, entrepreneurial intention. This study therefore aims to examine the effects of attitude, subjective norm, and entrepreneurship education, together with behavioral control, on entrepreneurial intention among university students, and to assess whether entrepreneurship education strengthens students' behavioral control toward entrepreneurship. The remainder of this article is organized as follows: the next section reviews the relevant literature and develops the research hypotheses; this is followed by the methodology, results, discussion, conclusion, and implications of the study.

LITERATURE REVIEW

Key Concepts and Prior Studies

Attitude is defined as a learned tendency to respond favorably or unfavorably toward an object (Andika & Madjid, 2012); in the entrepreneurial context, it reflects an individual's disposition toward creativity, innovation, and a willingness to face risk and challenge in business (Riyanti, 2019). Subjective norm refers to an individual's belief regarding the degree of support received from the surrounding environment, particularly family, in pursuing entrepreneurship; a supportive environment encourages positive behavior and provides role models with whom individuals can exchange ideas. Prior studies report that subjective norm exerts a strong influence on the formation of entrepreneurial intention (Fradani, 2016). Behavioral control describes the ease or difficulty an individual perceives in performing a given behavior, based on beliefs about the availability of the resources and opportunities required to carry it out (Kuswanti & Margunani, 2020). Entrepreneurship education is regarded as an important factor for cultivating entrepreneurial desire, spirit, and behavior among students (Wedayanti & Giantari, 2016).

Prior empirical findings on these relationships are not entirely consistent. Sumadi and Sulistyawati (2017) and Mirawati et al. (2016) both report that attitude and subjective norm exert a positive influence on entrepreneurial intention, a pattern that this study also tests. Setiabudi (2019) similarly finds that family support contributes positively to students' entrepreneurial intention. Regarding entrepreneurship education, Warnadi et al. (2019) argue that education is critical to entrepreneurial success and that overreliance on experience rather than education is a common cause of early entrepreneurial failure, while Anggraeni and Nurcaya (2016) caution that education alone does not automatically produce entrepreneurs, since other factors also shape entrepreneurial intention. Cahyono (2014) reports that an entrepreneurship course has a significant positive effect on entrepreneurial intention through behavioral belief, whereas Kuswanti and Margunani (2020) find that entrepreneurship education, together with social networks, strengthens entrepreneurial intention through perceived behavioral control. These contrasting findings indicate an unresolved debate on whether formal entrepreneurship education reliably translates into stronger behavioral control and, in turn, entrepreneurial intention—an issue this study addresses directly.

Theoretical or Conceptual Foundation

This study is grounded in the Theory of Planned Behavior (TPB), which explains behavioral intention as a function of attitude toward the behavior, subjective norm, and perceived behavioral control. Within this framework, attitude and subjective norm are modeled as direct antecedents of entrepreneurial intention, while behavioral control is positioned both as a direct antecedent of intention and as an outcome that can be strengthened through entrepreneurship education. This extension allows the study to examine not only the standard TPB predictors of intention but also whether a university-based educational intervention enhances students' perceived behavioral control toward entrepreneurship.

Hypotheses or Research Framework

Based on the conceptual foundation above, the following hypotheses are proposed and tested in this study:

H1: Attitude has a positive effect on entrepreneurial intention.

H2: Subjective norm has a positive effect on entrepreneurial intention.

H3: Entrepreneurship education has a positive effect on behavioral control.

H4: Behavioral control has a positive effect on entrepreneurial intention.

Table 1. Constructs and Variable Definitions

No.	Construct / Variable	Definition / Indicator	Source
1	Attitude (X1)	A learned tendency to respond favorably or unfavorably toward entrepreneurial behavior.	Andika & Madjid (2012)
2	Subjective Norm (X2)	An individual's belief regarding the degree of support from the surrounding environment (e.g., family) for engaging in entrepreneurship.	Fradani (2016); Setiabudi (2019)
3	Entrepreneurship Education (X3)	University-based instruction intended to cultivate entrepreneurial desire, spirit, and behavior among students.	Wedayanti & Giantari (2016)
4	Behavioral Control (X4)	The perceived ease or difficulty of performing a behavior, based on beliefs about the availability of required resources and opportunities.	Kuswanti & Margunani (2020)
5	Entrepreneurial Intention (Y)	The degree to which an individual is willing and prepared to engage in entrepreneurial behavior.	Paembong (2017)

Notes: All constructs above are cited in the text preceding this table.

METHODOLOGY

Research Design

This study employs a quantitative approach using a survey method (Darmawati, 2019). The design is appropriate for testing the hypothesized relationships among attitude, subjective norm, entrepreneurship education, behavioral control, and entrepreneurial intention derived from the Theory of Planned Behavior.

Data Source, Population, and Sampling

The population comprised active students at Universitas Borneo Tarakan (UBT). A purposive sampling technique was used, and the final sample consisted of 430 respondents, determined using the common PLS-SEM rule of thumb of ten observations per indicator applied to the questionnaire's 43 items ($43 \times 10 = 430$). Data were collected in 2021, during the COVID-19 pandemic, through a structured questionnaire.

The timing of data collection is analytically relevant rather than incidental. International evidence collected during the same period shows that students' perceived risk of COVID-19 can directly reduce entrepreneurial intention and can weaken the translation of entrepreneurial alertness into intention (Li et al., 2022), while other studies report that pandemic-related economic shock reshaped how students weighed personal, financial, and social entrepreneurial risk (Krichen & Chaabouni, 2022). Because the present data were collected within this window, the structural paths reported below – particularly the weak link between entrepreneurship education and behavioral control, and between behavioral control and intention – should be interpreted as potentially reflecting pandemic-era risk perception in addition to the stable, trait-like relationships TPB studies typically assume. This possibility is revisited in the Discussion and Limitations.

Measures, Instruments, or Analytical Protocol

Data were collected using a structured questionnaire comprising 43 indicator items measuring the five constructs of the study (attitude, subjective norm, entrepreneurship education, behavioral control, and entrepreneurial intention).

Data Analysis

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 3.0, following the two-stage procedure recommended for reflective models (Hair et al., 2022). The measurement (outer) model was assessed first, before any interpretation of structural paths, using four criteria: (a) indicator reliability, via standardized outer loadings (a common threshold is ≥ 0.70 , with loadings between 0.40 and 0.70 retained if their removal does not improve composite reliability or average variance extracted); (b) internal consistency reliability, via Cronbach's alpha and composite reliability (both conventionally ≥ 0.70); (c) convergent validity, via Average Variance Extracted ($AVE \geq 0.50$); and (d) discriminant validity, via the Fornell-Larcker criterion (Fornell & Larcker, 1981) and the Heterotrait-Monotrait ratio of correlations ($HTMT < 0.90$; Henseler et al., 2015).

RESULTS

Measurement Model (Outer Model)

Findings are presented in the sequence recommended for reflective PLS-SEM models: the measurement (outer) model is assessed first, followed by the structural (inner) model and hypothesis tests (Hair et al., 2022).

Structural Model

The structural model estimated in this study is presented in Figure 1.

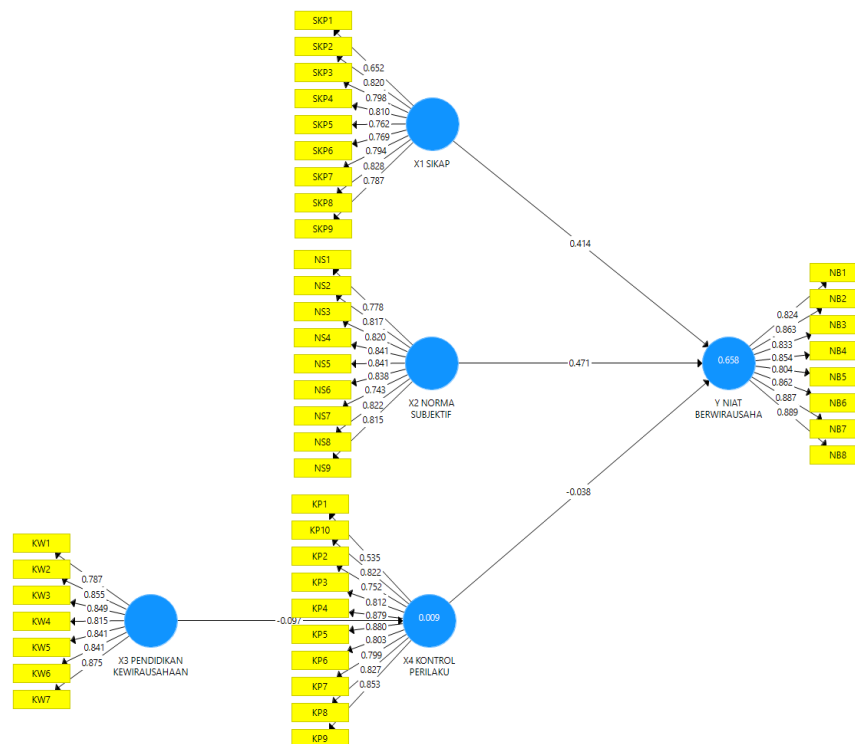


Figure 1. Structural Model of Entrepreneurial Intention

Source: Primary data processed by the researchers, 2021.

R-Square (R^2)

Table 2. R-Square Values

Endogenous Variable	R Square
Behavioral Control (X4)	0.009
Entrepreneurial Intention (Y)	0.658

Source: Primary data processed by the researchers, 2021.

R Square indicates the proportion of variance in an endogenous (dependent) variable explained by its predictor(s). As shown in Table 2, the R Square value for behavioral control is 0.009 (0.9%), meaning that the independent variables in the model explain only 0.9% of the variance in behavioral control, while the remaining 99.1% is explained by variables outside the research model. The R Square value for entrepreneurial intention is 0.658 (65.8%), meaning that the independent variables in the model explain 65.8% of the variance in entrepreneurial intention, while the remaining 34.2% is explained by variables outside the research model. It is worth noting that the R Square value for behavioral control (0.9%) is very low, indicating that entrepreneurship education alone is a weak predictor of behavioral control in this model and that other factors — such as prior entrepreneurial exposure, self-efficacy, access to capital, or family business background — likely account for most of the variance in students' perceived behavioral control. This low explanatory power should therefore be interpreted as a substantive finding about the limited reach of the current entrepreneurship education model, rather than as a statistical artifact, and is addressed further in the Discussion and Limitations sections.

Hypothesis Testing

Table 3. Direct-Effect Hypothesis Testing Results

Path	Original Sample (O)	Sample Mean (M)	SD (STDEV)	T-Statistic (O/STDEV)	P Value	Result
H1: X1 → Y	0.414	0.415	0.052	8.023	0.000	Supported
H2: X2 → Y	0.471	0.470	0.046	10.197	0.000	Supported
H3: X3 → X4	-0.097	-0.116	0.053	1.837	0.067	Not Supported
H4: X4 → Y	-0.038	-0.040	0.029	1.320	0.187	Not Supported

Notes: X1 = Attitude; X2 = Subjective Norm; X3 = Entrepreneurship Education; X4 = Behavioral Control; Y = Entrepreneurial Intention. Source: Primary data processed by the researchers, 2021 (SmartPLS 3.0 bootstrap output).

H1: Effect of attitude on entrepreneurial intention.

The path coefficient for attitude on entrepreneurial intention is 0.414, with a t-statistic of 8.023, exceeding the critical value of 1.96 ($8.023 > 1.96$). The p-value is 0.000, below the 0.05 threshold. These results indicate that attitude has a positive and significant effect on entrepreneurial intention; hypothesis 1 is therefore supported.

H2: Effect of subjective norm on entrepreneurial intention.

The path coefficient for subjective norm on entrepreneurial intention is 0.471, with a t-statistic of 10.197, exceeding the critical value of 1.96 ($10.197 > 1.96$). The p-value is 0.000, below the 0.05 threshold. These results indicate that subjective norm has a positive and significant effect on entrepreneurial intention; hypothesis 2 is therefore supported.

H3: Effect of entrepreneurship education on behavioral control.

The path coefficient for entrepreneurship education on behavioral control is -0.097, with a t-statistic of 1.837, below the critical value of 1.96 ($1.837 < 1.96$). The p-value is 0.067, above the 0.05 threshold. These results indicate that entrepreneurship education has a negative and non-significant effect on behavioral control; hypothesis 3 is therefore not supported.

H4: Effect of behavioral control on entrepreneurial intention.

The path coefficient for behavioral control on entrepreneurial intention is -0.038, with a t-statistic of 1.320, below the critical value of 1.96 ($1.320 < 1.96$). The p-value is 0.187, above the 0.05 threshold. These results indicate that behavioral control has a negative and non-significant effect on entrepreneurial intention; hypothesis 4 is therefore not supported.

DISCUSSION

Overall, the descriptive analysis indicates that respondents evaluated the study's variables favorably, as reflected in the high proportion of agreement across the constructs. The relationship between each pair of variables is discussed below.

Attitude and Entrepreneurial Intention

Attitude reflects the extent to which an individual or student believes that engaging in entrepreneurship is feasible and achievable. This study finds that attitude plays a strong role in generating entrepreneurial intention among students at the university studied, with most students holding a clear view—whether positive or negative—of entrepreneurial behavior.

Andika and Madjid (2012) define attitude as a learned tendency to respond favorably or unfavorably toward an object; in the entrepreneurial context, attitude can therefore be understood as a tendency to react affectively to the risks inherent in business. A favorable attitude encourages students to become more creative and innovative and more willing to confront risk and challenge in business. Creativity concerns how an individual generates something new—whether a work of art, a product, a strategy, or a practical idea—and how such ideas subsequently give rise to innovation (Riyanti, 2019). Attitude constitutes one of the foundations from which entrepreneurial intention originates: the stronger an individual's attitude, the more favorably they tend to view challenges and the less likely they are to give up when facing difficulty.

This finding is consistent with Sumadi and Sulistyawati (2017) and with Mirawati et al. (2016), both of which report that attitude has a positive effect on entrepreneurial intention. Based on the present findings, attitude appears to encourage students at the university studied to be creative and to generate entrepreneurship-related ideas, thereby contributing to the formation of entrepreneurial intention. Attitude therefore plays an important role in shaping students' entrepreneurial intention.

Subjective Norm and Entrepreneurial Intention

Subjective norm reflects an individual's belief regarding the degree of support received from the surrounding environment. A supportive environment encourages individuals toward positive behavior, just as a positive environment tends to influence those around it in a positive direction. Within such an environment, individuals may also find role models or supporters who encourage them to progress and with whom they can exchange ideas. Fradani (2016) similarly finds that subjective norm exerts a strong influence on the formation of entrepreneurial intention.

This finding is consistent with Setiabudi (2019) and with Sumadi and Sulistyawati (2017), both of which report that subjective norm has a positive effect on entrepreneurial intention. Based on the present findings, subjective norm—reflected here primarily in family support—appears to encourage students at the university studied toward entrepreneurship. Family support for entrepreneurship, whether direct or indirect, provides experience that helps individuals mature in facing the future, thereby strengthening their willingness to try entrepreneurship.

Entrepreneurship Education and Behavioral Control

Entrepreneurship education has long been considered an important factor in cultivating entrepreneurial desire, spirit, and behavior among students (Wedayanti & Giantari, 2016). Its implementation in higher education has proceeded gradually and continuously, and it has increasingly become a topic addressed through discussions, seminars, workshops, and lesson-learned sessions featuring successful alumni entrepreneurs as benchmarks.

This study finds a negative and non-significant effect of entrepreneurship education on behavioral control. This result diverges from Warnadi et al. (2019), who argue that education is critical to entrepreneurial success and that overreliance on experience rather than education is a common cause of early entrepreneurial failure. In principle, entrepreneurship education is intended to broaden students' knowledge and thereby strengthen their perceived behavioral control; however, education alone does not automatically produce entrepreneurs, since other factors also shape entrepreneurial intention (Anggraeni & Nurcaya, 2016). This finding also diverges from Cahyono (2014), who reports a significant positive effect of an entrepreneurship course on entrepreneurial intention through behavioral belief. The present results do not support hypothesis 3, which proposed that entrepreneurship education (X3) has a significant effect on behavioral control.

This result suggests that entrepreneurship education, as currently delivered at the university studied, is important for broadening students' knowledge but has not yet translated into the confidence and

readiness required to act on entrepreneurial opportunities. According to respondents' answers on the item "the entrepreneurship material provided fosters entrepreneurial intention," 39.8% gave responses ranging from disagree to agree, compared with 27.0% who strongly agreed; in addition, the entrepreneurship course is offered for only one semester during the study period. Beyond the limited duration of the course, this weak link may also reflect a broader theoretical gap between the transmission of entrepreneurial knowledge and the formation of perceived behavioral control: knowledge acquired in a classroom setting does not automatically translate into a felt sense of capability unless it is reinforced by direct, hands-on experience, role models, or entrepreneurial self-efficacy. Consistent with this view, a lecture-based, exam-oriented delivery format may build cognitive understanding of entrepreneurship without building the experiential confidence that behavioral control requires, suggesting that the mode of delivery — rather than education per se — may be a key boundary condition worth testing in future research.

Behavioral Control and Entrepreneurial Intention

Behavioral control refers to the ease or difficulty an individual experiences in performing a given behavior, based on beliefs about the availability of the required resources and the opportunity to carry out that behavior (Kuswanti & Margunani, 2020). It reflects the extent to which an individual is able to manage themselves in making decisions, thereby strengthening their readiness to accept the risks associated with each decision.

This finding contrasts with Cahyono (2014) and with Kuswanti and Margunani (2020), both of which report that behavioral control has a positive and significant effect on entrepreneurial intention, with entrepreneurship education contributing to that effect. The present results do not support hypothesis 4, which proposed that behavioral control (X4) has a significant effect on entrepreneurial intention.

This finding suggests that, in this study, behavioral control does not mediate the relationship between entrepreneurship education and entrepreneurial intention. The learning process within the entrepreneurship course has not yet been sufficient to shape the disposition—such as attitude toward the behavior—that drives entrepreneurial intention. In other words, the educational process undergone by students has not yet been sufficient to develop the knowledge, skills, and attitudes required for entrepreneurship. It is also plausible that behavioral control operates less directly in this population because entrepreneurial intention among students at this early career stage is driven more by affective and social evaluation (attitude and subjective norm) than by a calculated assessment of resources and capability; behavioral control may become more predictive at a later stage, closer to actual business start-up, when resource constraints become concrete rather than anticipatory. Future studies could test this possibility directly by comparing behavioral control's predictive strength across student cohorts at different stages of entrepreneurial readiness.

Theoretical Implications

This study extends the Theory of Planned Behavior by testing it alongside entrepreneurship education as an antecedent of behavioral control among Indonesian university students. The findings offer partial support for the theory: consistent with TPB, attitude and subjective norm are confirmed as significant direct predictors of entrepreneurial intention. However, behavioral control does not significantly predict entrepreneurial intention in this setting, and entrepreneurship education does not significantly strengthen behavioral control. This pattern suggests that, among the student population studied, the attitudinal and normative pathways of TPB carry considerably more explanatory weight than the control-based pathway, indicating a boundary condition for the applicability of the full TPB model in early-stage, education-embedded entrepreneurial contexts.

Practical Implications

For university administrators and curriculum designers, these findings suggest that fostering favorable attitudes toward entrepreneurship and strengthening family and peer support may be more effective levers for building entrepreneurial intention than the current form of entrepreneurship education alone. Because entrepreneurship education did not translate into stronger behavioral control in this study, universities may need to reconsider how such courses are designed and delivered—for example, by extending the course beyond a single semester and by complementing classroom instruction with practice-based activities such as seminars, mentoring, and hands-on entrepreneurial practice, so that education is more directly connected to students' confidence and readiness to act.

Limitations and Future Research

This study has several limitations. First, it draws on a single university population and a specific set of constructs, which may limit the generalizability of the findings. Second, entrepreneurial intention was measured through a cross-sectional questionnaire, which does not capture how attitudes, norms, and behavioral control may develop over time. Third, the data were collected in 2021, during a period when the COVID-19 pandemic had disrupted economic activity and campus life in Indonesia; this context may have shaped students' risk perceptions and entrepreneurial attitudes in ways that are not explicitly modeled here, and findings should be interpreted with this contextual backdrop in mind. Based on these limitations, future research is encouraged to: (1) examine these relationships in greater depth, including additional variables and an expanded research model, and to consider broader or alternative sampling frames such as university alumni, together with more comprehensive and accurate measurement instruments to obtain more robust and valid results; (2) evaluate the effect of extending entrepreneurship education beyond a single semester; and (3) examine the effect of supplementary entrepreneurship activities, such as seminars and hands-on practice, on entrepreneurial intention.

CONCLUSION

Based on the findings of this study on entrepreneurial intention among university students, attitude and subjective norm emerge as the constructs that matter most to students. Attitude reflects a tendency to react affectively to the risks inherent in business and shapes an individual's decision to form entrepreneurial intention; a stronger entrepreneurial attitude among students is therefore associated with stronger entrepreneurial intention. Subjective norm, reflected here primarily in family support, is also important, since the family is typically the first environment an individual encounters, and family support—whether for entrepreneurship itself or for the decision to pursue it—is deeply valued and helps prepare individuals to face entrepreneurial challenges.

Entrepreneurship education, offered as a compulsory general course at the university studied and intended, in part, as a government effort to raise entrepreneurial intention, was not found in this study to strengthen students' behavioral control toward the decision to become an entrepreneur; many students still express a preference for becoming employees rather than entrepreneurs. Entrepreneurship education, as currently delivered, therefore does not by itself guarantee that students who have completed the course will develop the behavioral control needed to form entrepreneurial intention.

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