

## IMPLICATIONS OF PERCEIVED BEHAVIORAL CONTROL ON ENTREPRENEURIAL INTENTIONS OF INDONESIAN COLLEGE STUDENTS: SELF-EFFICACY AS A MEDIATOR

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### ABSTRACT

*Entrepreneurial intention needs to be considered by the Indonesian government when creating entrepreneurs, especially among students who have the potential to become entrepreneurs. Two psychological variables influence entrepreneurial intention in students. This study aims to test the effect of perceived behavioral control on entrepreneurial intention by involving self-efficacy as a mediator variable. This study uses a quantitative method, using Hayes' Process Macro analysis and the Statistical Package for the Social Sciences (SPSS) program. The research subjects involved in this study were 199 active students. This study obtained a BootLLCI value of 0.1576, which is greater than BootULCI 0.418, which shows that self-efficacy does have a significant influence as a mediator between perceived behavioral control and entrepreneurial intention in students. This study is expected to provide a deeper understanding to researchers and practitioners, especially in educational institutions, about the development of entrepreneurial intention by considering psychological factors in students.*

**Keywords:** Perceived behavioral control, Entrepreneurial intention, Self-efficacy.

### INTRODUCTION

Entrepreneurship has become one of the most widely discussed topics in recent years. It is proven that one form of entrepreneurship that is currently developing is startups. Startups themselves are predicted to influence the creation of new jobs and work patterns in the future (Wilkinson, 1999) and become one type of business model that is the main source of innovation (Astuti et al., 2023; Sedláček & Sterk, 2017; Storey, 2016). Even research conducted by the Global Entrepreneurship Research Association (2018) shows that entrepreneurial activities such as startups will grow globally and this can certainly affect the improvement of the global economy.

In Indonesia, startups are one of the government programs that continue to be developed in quality and quantity. The government's seriousness in developing this startup business model can be seen from several programs being run through the Ministries they have. Several programs have been developed, such as the Indonesian Startup Innovation program organized by the Ministry of Research and Technology/National Research and Innovation Agency (RISTEKBRIN), the National Movement of 1000 Digital Startups is a program for fostering early-stage startups initiated by the Ministry of Communication and Information of the Republic of Indonesia and the Directorate General of Informatics Applications since 2016 and Next Indonesia Unicorn (NextICorn) is also a program initiated by the Ministry of Communication and Information of the Republic of Indonesia and the Directorate General of Informatics Applications.

Regarding the seriousness of developing programs in terms of quality and quantity, the government must be supported by relevant research, which can be used as a basic consideration in improving the program. For example, knowing what impacts an individual's intention to become an entrepreneur is important. Specifically, students are the community group that plays a role in increasing the number of entrepreneurs building entrepreneurship (Ali, 2021). Students are among the actors who have significant potential to build entrepreneurship in Indonesia. Students can also be individuals who might start their businesses and start earning income after completing their studies (Anjum et al., 2021). Academics emphasize that students' entrepreneurial intentions can determine their actual career choices as entrepreneurs (BarNir et al., 2011). Several universities try to include courses as courses that introduce students to entrepreneurship, such as research conducted by Novitasyari et al. (2017). A study at the Indonesian Education University showed that entrepreneurship courses can increase students' interest in entrepreneurship, primarily through improving practical skills and understanding of business risks. This is done because entrepreneurship is a relevant tool to drive the progress and financial development of any country (Ferreira et al., 2023).

Entrepreneurship has been considered a key to economic development, as it generates income and employment for people in different contexts (Hasan, 2020). In order to know entrepreneurship itself, it is necessary to measure the intention to become an entrepreneur, which is called entrepreneurial intention. Entrepreneurial intention refers to an individual's willingness to start a new business (Kautonen et al., 2015). In the Theory of Planned Behavior (TPB), intention is a central factor that shows how much an individual intends and plans to engage in a behavior (Ajzen, 1991). Intention itself is the main key to action. The importance of cognitive variables in understanding this personal decision has been highlighted by (Entrialgo & Iglesias, 2017; Thévenon & Del Pero, 2015), who agree that this cognitive variable provides additional insight into the complex entrepreneurial process. Thus, the study of entrepreneurial intention deepens the pattern of entrepreneurial behavior. Intention is also the result of the interaction between the individual and his context, and the analysis focuses on the factors that influence it (Londero-Santos et al., 2021)

Entrepreneurial intention is one of the psychological components of an individual's willingness to become an entrepreneur. Ajzen and Fishbein (1975) define entrepreneurial intention as an individual's deliberate action or attitude to start a new business or seek new opportunities. (Tomy & Pardede, 2020)

emphasized that entrepreneurial intention refers to the idea of developing a practical and specific plan for starting a business. This can also be interpreted as a person's desire to own and start a personal business, including plans to become an entrepreneur (Krueger et al., 2000). Before starting a business, entrepreneurial intention is considered a precursor to starting a business (Youn & Hyun, 2019). Entrepreneurial intention is a prerequisite for starting a startup. Entrepreneurial intention is manifested in the entrepreneur's efforts to implement startup activities and apply individual interests and actions to start a business ((Maheshwari et al., 2023)). Entrepreneurs' involvement in possibly starting their own business is also considered a positive attitude toward startups (Baron & Hmieleski, 2018; Maheshwari et al., 2023). Entrepreneurial intention must precede the establishment of a start-up company. Mengesha (2020) consider entrepreneurial intention an important factor in predicting individual entrepreneurship, including students.

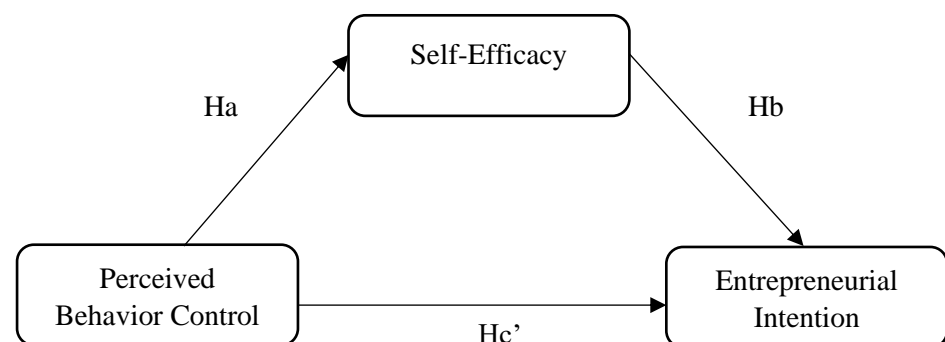
This intention is certainly based on several factors that influence it, one of which is perceived behavioral-control (PBC) (Barba-Sánchez et al., 2022; Qalati et al., 2022). Ajzen (1991) introduced the concept of PBC as an antecedent factor that can predict intention. It is "a person's perception of the ease or difficulty of performing a desired behavior". Feelings of ability and behavioral control can influence whether the individual can build a new business. According to Ajzen (2002), PBC tries to consider involuntary elements of behavior, focusing on outcomes. Individuals try to check whether the perceived behavior will help achieve the desired results. In the intention of entrepreneurship, students will try to control their behavior by considering the difficulty or otherwise of the desired results. This is the basis for whether the behavior will be carried out or not according to the person. This means that perceived behavioral control influences students' desire to engage in entrepreneurial activities or take risks in business. Ruhle et al., (2010) also found that perceived behavioral control has a major impact on students' intentions because various feasibility factors can be felt to increase students' entrepreneurial intentions.

This entrepreneurial intention in some literature is also closely associated with self-efficacy (Elnadi & Gheith, 2021; Yeh et al., 2021). Even empirical research has highlighted that self-efficacy is the strongest personal factor influencing students' entrepreneurial intentions (Zhao et al., 2005) (Zhao et al., 2005). Several academics from various perspectives have defined self-efficacy. Self-efficacy itself is related to how actions, behaviors, perceptions, cognitions, and the environment influence each other in a way that motivates oneself (Shahab et al., 2019). At the same time, others describe entrepreneurial self-efficacy as an individual's confidence in their ability to complete the entrepreneurial process (Tsai et al., 2016). Individuals with high self-efficacy tend to have stronger entrepreneurial intentions. They believe that following a set plan increases their chances of achieving positive results (Ferreira-Neto et al., 2023). For example, when undergraduate and graduate students have high self-efficacy, they also have high intentions to engage in entrepreneurship (Youn & Hyun, 2019). In addition, different results are conducted in different countries (Miranda et al., 2017). In other words, the level of self-efficacy that influences the intention to start a business depends on each specific context. However, there is still a lack of research investigating the indirect effect of entrepreneurial self-efficacy on the intention to start a business (Miranda et al., 2017).

In entrepreneurship itself, gender differences are also still widely discussed; research data shows that career patterns vary; for example, women's participation in the business sector has increased, but the increase has not been the same as the number of men, which is twice as large (Shirokova et al., 2016; Zampetakis et al., 2017). The most frequently seen reason is because of the perception that entrepreneurship is more appropriate for men who tend to have independence, autonomy, and courage, which are important parts of building a business (Shirokova et al., 2016). This is also inseparable from Indonesian society, where gender differences are something that needs to be considered, social perception (Anggadwita et al., 2017), where there is an assumption that men's ability to take risks is braver than women's (Ika, 2018). Although some studies argue that there are few or no gender differences in entrepreneurship, evidence from reviews and meta-analytic studies within the TPB framework suggests that, in general, compared to women, men exhibit more positive attitudes toward entrepreneurship report higher levels of subjective norms, PBC, and intentions; have a higher preference for entrepreneurship; and are more active in the venture launch process (Nowiński et al., 2019).

In Indonesia it self, in 2021, only 3.1% of the population were entrepreneurs, which is still far from ideal (Assegaf, 2021). Data shows that to become a prosperous country, at least 4% of its population needs to become entrepreneurs (VOI, 2022). Therefore, research on entrepreneurship in students is very important for determining the psychological factors that can influence students' entrepreneurial intentions by considering two factors: perceived behavioral control and self-efficacy. Based on the explanation above, this study proposes several hypotheses:

1. Ha: There is a direct influence of PCB on SE
2. Hb: There is a direct influence of SE on EI
3. Hc: There is a direct influence of PCB on EI
4. Hc': SE mediates an influence of PCB on EI



**Figure 1.** The conceptual framework

## RESEARCH METHOD

### Research Design

Quantitative research design systematically tests the relationship between variables using numerical data and statistical analysis (Creswell, 2014). This study chose to use a quantitative approach because it wanted to test the variables being measured. This design is often used to measure, compare, or test hypotheses based on samples that represent a particular population (Sugiyono, 2019).

### Participants and Research Ethic

The purposive sampling technique was used to recruit participants in this study, which is included in the non-probability sampling technique, where researchers select respondents based on certain characteristics relevant to the research objectives (Stratton, 2024). The participants determined in this study were students with active status. They were not on leave from college, so students from any semester and any campus could become participants in this study. In the participant recruitment process, the researcher used an online survey and obtained 203 participants willing to complete the questionnaire. This online survey helped the researcher reduce bias and reach all active students in any semester and from any campus, but only 199 participants were eligible for further analysis.

**Table 1.** Description of Research Subjects N = 199

Gender	Man	16%
	Woman	84%
Semester Range	2 – 4	80%
	5 – 8	18%
	9 – 13	2%
Age Range	18 – 20	65%
	21 – 22	26%
	23 – 24	10%
Have or are taking entrepreneurship courses	Yes	26,6
	No	73,4%

Source(s): Table by authors

Based on Table 1, this study obtained some data from the research subjects. The data shows that the research subjects were dominated by female students, as much as 84%, and the number was greater than the male student subjects, which only amounted to around 16%. Students who were the subjects in this study were also dominated by students who were in semesters 2 to 4, namely 80%, compared to subjects with a range of semesters 5-8, which only ranged from 18% and semesters 9-13 around 2%. While for the age range, most were dominated by students aged between 18-20 years, 26% were aged 21-22 years, and the remaining

10% were in the age range of 23-24 years. This study also collected answers to questions such as whether students had ever taken entrepreneurship-related courses; the answers obtained were 73.4% never, and 26.6% had taken entrepreneurship courses.

In ensuring that research ethics are established in this research, before students filled out the questionnaires, the researcher provided informed consent to maintain the participants' anonymity, stated that there were no wrong and right answers, and provided information related to the purpose of the study (Podsakoff et al., 2003). The researcher also ensured no penalty when participants withdrew from the research process.

## Measurement

Researchers use a psychological scale according to previously determined variables. The psychological scale was adapted from several researchers. The adaptation was carried out by translating all scales from English into Indonesian using a translator and by creating items whose language was easier for respondents to understand. Several adapted scales, such as the perceived behavior control (PBC) scale, consist of 3 aspects, namely perceived difficulty, perceived confidence, and perceived controllability, consisting of 9 statement items (Vamvaka et al., 2020). Here is an example of a statement that is asked, "If I wanted to, I could easily pursue a career as an entrepreneur", "If I try to start a business, I will have a great chance of success". The second scale is self-efficacy, which consists of 3 aspects, namely level, strength and generality, as many as 14 items (Bandura, 1977). Here is an example of a statement that is asked, "I believe I can overcome the challenges of building a business if I try", "I can build a business in my own way". At the same time, the third scale is entrepreneurial intention, which consists of 3 aspects: choice, commitment and as many as 14 items (Vamvaka et al., 2020). Here is an example of a statement that is asked, "I prefer to have my own business rather than getting a higher salary if I work for someone else", "I prefer to have my own business rather than pursuing a career elsewhere". All research scales used to use the answer form recommended by Likert with answer choices Very Appropriate (5), Appropriate (4), Neutral (3), Not Appropriate (2), and Very Not Appropriate (1).

The three adapted scales were then analyzed using the Statistical Package for the Social Sciences (SPSS) program to determine each item's validity. The initial analysis stage is the validity test, where all items are declared valid with the calculation:  $r_{\text{count}} > r_{\text{table}}$  from all items obtained  $r_{\text{count}}$  more than 0.148.

**Table 2.** Validity Test Result

Item number	r-calculated	r-table (5%)	Result
PBC1	0.484	0.148	Valid
PBC2	0.649	0.148	Valid
PBC3	0.669	0.148	Valid
PBC4	0.727	0.148	Valid
PBC5	0.730	0.148	Valid
PBC6	0.743	0.148	Valid
PBC7	0.621	0.148	Valid

Item number	r-calculated	r-table (5%)	Result
PBC8	0.315	0.148	Valid
PBC9	0.553	0.148	Valid
EI1	0.542	0.148	Valid
EI2	0.586	0.148	Valid
EI3	0.500	0.148	Valid
EI4	0.351	0.148	Valid
EI5	0.701	0.148	Valid
EI6	0.666	0.148	Valid
EI7	0.720	0.148	Valid
EI8	0.720	0.148	Valid
EI9	0.679	0.148	Valid
Ei10	0.578	0.148	Valid
EI11	0.577	0.148	Valid
EI12	0.578	0.148	Valid
EI13	0.526	0.148	Valid
EI14	0.523	0.148	Valid
SE1	0.520	0.148	Valid
SE2	0.615	0.148	Valid
SE3	0.190	0.148	Valid
SE4	0.533	0.148	Valid
SE5	0.688	0.148	Valid
SE6	0.694	0.148	Valid
SE7	0.770	0.148	Valid
SE8	0.749	0.148	Valid
SE9	0.773	0.148	Valid
SE10	0.686	0.148	Valid
SE11	0.746	0.148	Valid
SE12	0.800	0.148	Valid
SE13	0.616	0.148	Valid
SE14	0.654	0.148	Valid

This study also conducted a reliability test on the three adapted scales using the Cronbach Alpha formula. The instrument criteria are declared reliable if the alpha value is  $> 0.7$ , which means sufficient reliability (Sugiyono, 2018). Reliability analysis on each variable obtained a Cronbach alpha coefficient of 0.786 for the PBC scale and 0.854 for the EI and SI scales, with a Cronbach alpha coefficient of 0.898.

**Table 3.** Reliability Test Result

Variable	Cronbach's Alpha	Result
Perceived behavior control	0.786	Reliable
Self-efficacy	0.898	Reliable
Entrepreneurial intention	0.854	Reliable

### Data analysis

The analysis used in this study uses Hayes' Process Macro in the Statistical Package for the Social Sciences (SPSS) (Hayes, 2013). This analysis can test how the mediator variable (M) transmits the influence of the independent variable (X) to the dependent variable (Y). This means that this study looks at whether the mediator variable, namely self-efficacy, transmits the influence of perceived behavioral control on entrepreneurial intention. Before conducting a hypothesis test, this study also first conducted a bivariate correlation test to see the relationship between variables one by one (perceived behavioral control, self-efficacy and entrepreneurial intention) using Pearson product-moment correlation analysis.

## RESULT AND DISCUSSION

Before conducting a hypothesis test, this study first conducted a correlation test on the three variables. The initial analysis carried out in this study was by conducting a bivariate correlation test to see the relationship between variables one by one (perceived behavioural control, self-efficacy and entrepreneurial intention) using Pearson analysis ((product-moment correlation). The correlation results can be seen in Table 2. The correlation results show that PCB positively correlates with SE with an r-value of 0.541  $p < 0.001$ . A positive correlation was also found in the relationship between SE and EI ( $r = 0.538$   $p < 0.001$ ) and PBC with EI ( $r = 0.589$   $p < 0.001$ ).

**Table 4.** Results of Correlation Analysis between Variables

Correlation between Variables	r	p
PBC & SE	0,541	<0,001
SE & EI	0,538	<0,001
PBC & EI	0,589	<0,001

Source(s): Table by authors

The mediation test was conducted using Process Macro for SPSS and SAS 3.0, developed by Andrew F. Hayes. Process Macro is a regression-based technique for analyzing mediation and moderation (Hayes, 2013). After obtaining the correlation value for each variable, the researcher then conducted a regression analysis to see the effect of the PCB variable on EI mediated by SE; the following are the results of the analysis:

**Table 5.** Results of Regression Analysis between Variables

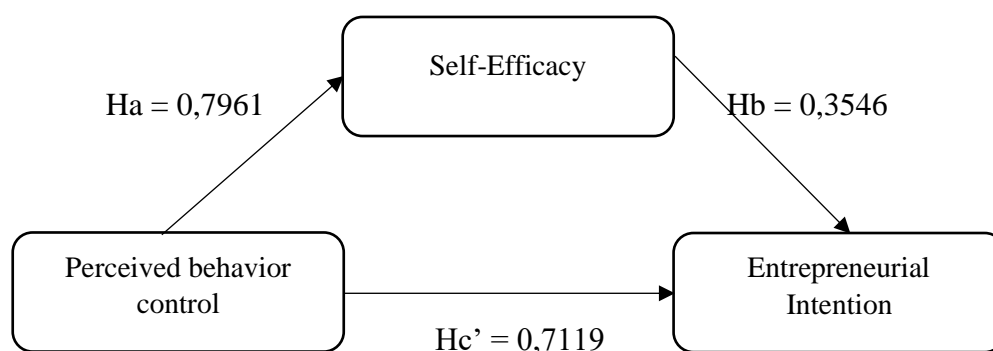
Variables	Beta Coefficient	t	p
PCB → SE	0,7961	9,0247	0,00
SE → EI	0,3546	4,7635	0,00
PCB → EI	0,9942	10,2377	0,00

Source: Table by authors



Table 3 shows some results of regression analysis calculations between variables using the Process Macro program from Hayes in the Statistical Package for the Social Sciences (SPSS) (Hayes, 2013). The first result obtained is the influence of the PCB variable on SE with a beta coefficient of 0.7961 with a t count of 9.0247 ( $p = 0.00$   $p < 0.05$ ). This shows that the perceived behavior control variable can directly and significantly influence self-efficacy, and  $H_a$  is accepted. The second result obtained from the table above also shows that the influence of SE on EI  $H_b$  is accepted. The third result shows that EI is also directly influenced by PCB with a beta coefficient of 0.9942 with a t count of 10.2377 ( $p = 0.00$   $p < 0.05$ )  $H_c$  is accepted.

Furthermore, this study conducted a hypothesis test to see the effect of PCB on EI mediated by SE. The analysis results showed that PCB had an effect on EI mediated by SE. This can be seen from the BootLLCI value of 0.1576, greater than the BootULCI of 0.418. This shows that the SE variable significantly mediates PCB and EI, and  $H_c'$  is accepted.



**Figure 2.** Regression analysis results

The existence of a significant influence when the SE variable becomes a mediator variable between PCB and EI has been studied by (Vamvaka et al., 2020). Several other researchers found that PBC affects EI with research subjects of students in Zambia, Africa (Mwiya et al., 2017) or research discussing the influence of SE on EI in students in Vietnam (Doanh & Bernat, 2019). Self-efficacy reflects an individual's perception of the abilities and skills needed to perform certain tasks in order to control or manage problems (Bandura, 2001). Self-efficacy can influence students' behavior, choices, decision-making, persistence, and adherence to goals (Godwin et al., 2016). Nwanzu and Babalola (2019) stated that self-efficacy is the belief in one's ability to perform certain tasks. This means believing and seeing oneself as a party capable of facing life's challenges. In other words, self-efficacy reflects a person's belief in their ability to perform certain behaviors (Hsu et al., 2017).

Interestingly, when looking at the data analysis conducted, it was also obtained that the ability of PBC mediated by SE in influencing EI or called indirect influence with an effect value of 0.2823, was not greater when PBC influenced EI directly with a value of 0.7119. This could happen because students still need to be fully confident in themselves compared to their self-control. In addition, self-efficacy is an internal measure of PBC, with this PBC display being separated into perceived self-efficacy and perceived controllability, with perceived self-efficacy

measured by perceived difficulty and perceived confidence (Ajzen, 2002; Schlaegel & Koenig, 2014). This means that self-efficacy is a small part that should not be separated from PBC itself. Individuals will prefer to consider PBC and SE, while both have been measured in PBC.

SE itself is more of an internal control actor, such as knowledge and skills, and reflects a person's perception of the ease or difficulty in performing a particular behavior and a person's belief in their ability to perform the behavior. On the other hand, perceived control includes external control factors, such as resources, opportunities, and potential obstacles. It reflects a person's perception that the implementation of the behavior depends entirely on them. In Indonesian society, external factors, such as resources, opportunities, and potential obstacles, significantly influence the intention to become an entrepreneur. Moreover, students still depend heavily on their lives and surroundings, such as their families or things outside themselves, compared to their confidence in building the business. Social support, such as family, can influence students' intention to become entrepreneurs (Sennang, 2017). In fact, according to research conducted by Kimura and Masykur, (2017), parental support was the highest factor influencing students' intentions to become entrepreneurs.

Another study also found that SE is a relatively weak predictor in influencing EI compared to PBC (Vamvaka et al., 2020). Self-efficacy is one of the main determinants of individual activity choices. Some people will tend to do activities that make them feel competent and confident, while others tend to avoid behaviors that they consider to be beyond their skills and abilities (Bandura, 1977). At this point, students still feel that they need more time to be able to run a business/enterprise with the skills they have. Therefore, behavioral control tends to be stronger in influencing the intention to become an entrepreneur (Ajzen, 2006). Self-efficacy is part of the individual's self-side in showing how someone has the ability, belief, and motivation towards a goal. In entrepreneurship research, self-efficacy is predominantly considered as an individual's belief in being able to successfully carry out the necessary entrepreneurial actions (Chen et al., 1998). Self-efficacy is a powerful tool for increasing entrepreneurial passion. When their passion is stronger, students are more motivated to seek creative opportunities that shape entrepreneurial goals (Neneh, 2022). Self-efficacy can also encourage individuals to form entrepreneurial intentions. Students who choose to become entrepreneurs and have higher levels of self-efficacy will later find it easier to handle difficult situations, and these positive feelings increase their entrepreneurial passion (Fesharaki, 2019). Thus, self-efficacy is also an important part of increasing entrepreneurial intentions (Cardon & Kirk, 2015; Neneh, 2022).

A person who has high self-efficacy tends to have the belief to succeed. Individuals who have a great interest in a particular activity will engage in behaviors that increase their abilities and, as a result, their self-efficacy (Murnieks et al., 2014). In addition, self-efficacy also influences a person's career choice. A person usually chooses a career that suits their education and abilities (Krueger et al., 2000). Choosing a career that suits their education and abilities is also one of the things that students consider when starting a new business.

The effectiveness of PBC in directly influencing EI compared to using the SE scale can also be explained from the perspective of the number of students who became the research sample who were only in semesters 2-4. As many as 80% of

the total sample of 199 subjects. In addition, the researcher also obtained survey results related to entrepreneurship courses. The results were that around 128 subjects out of 199 did not or had yet to take entrepreneurship-related courses. These things allow early semester students' self-confidence not to grow optimally. This is also strengthened by several studies that assume that a person's entrepreneurial intention is a behavior that does not occur spontaneously, meaning that they are aware and make plans and believe they can control what they plan, so self-control plays an important role here (Ajzen & Fishbein, 1980; Autio et al., 2001).

## CONCLUSION

This study aims to see the effect of perceived behavioral control (PBC) on entrepreneurial intention (EI) mediated by self-efficacy (SE). The results of the study found that there was indeed a significant effect when the SE variable became a mediator variable between the PCB variable in influencing EI. Interestingly, it was also found that the direct effect of PCB on EI was greater than if it had to go through the SE mediator variable. This could happen because most students who were the research sample were in the early semester of college between semesters 2-4 and had yet to take any entrepreneurship-related courses. These things here could cause them to have lower self-confidence in building a business in the future. The results of this study are expected to have implications for higher education in providing facilities and entrepreneurship programs to students from the beginning of their studies so that self-confidence can be instilled earlier than when they only get facilities or programs related to entrepreneurship given at the end of the lecture period.

The limitation of this study is that it has only 199 respondents, which is certainly not enough to describe the real situation. It is recommended that further research use a larger number of respondents. In the data collection process, the information provided by respondents through questionnaires sometimes does not show the respondents' true opinions; this happens because sometimes the differences in thoughts, assumptions, and understandings of each respondent are different, as well as other factors such as honesty in filling in the respondents' opinions in their questionnaires. The suggestion for further researchers is to ensure that the items on the scale used do not use leading questions where respondents are not directed to certain answers.

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