

The role of self-efficacy: Entrepreneurial knowledge and attitude toward entrepreneurship to entrepreneurial intention

Indi Deli Fiallo Wibowo^{1,*}, Nadia Shadab Khan²

¹ Universitas Gadjah Mada, Yogyakarta, Indonesia

² Northwestern University in Qatar, Ar-Rayyan, Qatar

* Correspondent Author Email: indidelifw@gmail.com

ARTICLE INFO

Article History

Received: 17-05-2024

Revised: 27-05-2024

Accepted: 28-05-2024

Keywords

Self-Efficacy;

Entrepreneurial Knowledge;

Attitude toward

Entrepreneurship;

Entrepreneurial Intention.

Paper Type: Research paper

ABSTRACT

Purpose-Internal and-external factors certainly influence an individual's intention to start a business. Entrepreneurial intention needs to be fostered early so that the younger generation not only depends on existing jobs but also creates jobs and develops business ideas. Self-efficacy acts as a mediating variable in the influence of entrepreneurial knowledge and attitudes towards entrepreneurship on entrepreneurial intentions.

Design/Methodology/Approach-The population of this study focused on the younger generation, especially students in Indonesia. The research data were obtained through an online questionnaire, and 95 respondents were obtained. The research data were analyzed using the Smart PLS software (version 4.0).

Findings-Entrepreneurial knowledge proved to have no effect on entrepreneurial intention but proved to have a positive effect on self-efficacy. Self-efficacy has a positive effect on entrepreneurial intention. Self-efficacy did not mediate the effect of entrepreneurial knowledge on entrepreneurial intention. Attitude towards entrepreneurship has a positive effect on entrepreneurial intention and self-efficacy. Self-efficacy has been proven to mediate the effect of attitudes towards entrepreneurship on entrepreneurial intention.

Research limitations/implications-For individuals, especially the younger generation, it is necessary to increase knowledge about entrepreneurship and develop an attitude towards entrepreneurship to encourage entrepreneurial intentions early on. In addition, to support entrepreneurial intentions, individuals must pay attention to other factors such as self-efficacy.

Originality/value-This study analyzed the entrepreneurial intention of university students in Indonesia by considering the factors of entrepreneurial knowledge, attitude towards entrepreneurship, and self-efficacy.

This is an open access article under the [CC-BY-SA](#) license.



1. The Introduction

Unemployment is a major problem for every country worldwide (Akeju & Olanipekun, 2014). Unemployment is a social problem that must be addressed immediately because it has an impact on the country's economy (Ridha & Parwanto, 2020). The high rate of population growth is not matched by employment availability, thus causing an increase in the number of unemployed people (Hall & Schulhofer-Wohl, 2018). One effort to reduce unemployment is entrepreneurship (Sondari, 2014). Entrepreneurship can train individuals in terms of thinking, solving problems, utilizing existing things, and looking for opportunities (Bacigalupo et al., 2016).

Understanding the knowledge and abilities acquired by an actual business requires the intention to be an entrepreneur (do Paço et al., 2015). Bae et al. (2014) defined entrepreneurial intention as the desire to run a firm. According to the Theory of Planned Behavior (TPB), control, subjective norms, and modes of action come before an individual's intentions and actions (Ajzen, 2020). Several factors affect entrepreneurial intention, including self-efficacy, attitudes toward entrepreneurship, and entrepreneurial knowledge. Entrepreneurial knowledge is a variety of information arranged logically and sensibly for managing a firm (Joseph et al., 2023). Entrepreneurship education aims to encourage more entrepreneurial attitudes, such as creativity, invention, and risk-taking, in addition to business concepts, marketing strategies, and strategic planning (Abun et al., 2018). Zhang et al. (2014) and Lv et al. (2021) showed that entrepreneurship knowledge may encourage entrepreneurial intention. Knowledge is the best way to promote self-confidence and entrepreneurial attitudes (Roxas, 2014). As Puni et al. (2018) highlight, identifying entrepreneurial opportunities and expertise is a crucial part of studying entrepreneurial business. According to Urban (2020), self-efficacy and degree of entrepreneurial expertise are factors that influence entrepreneurial intention. Researchers apply TPBs to analyze entrepreneurial knowledge, which plays an important role in entrepreneurial intention (Miralles et al., 2016).

In addition to knowledge, attitudes are needed to encourage entrepreneurial intention in individuals. Attitude towards entrepreneurship refers to an individual's level of interest in becoming an entrepreneur. This attitude depends on expectations and beliefs regarding the impact of being an entrepreneur (Botsaris & Vamvaka, 2016). Based on research conducted by Küttim et al. (2014) and Vamvaka et al. (2020), attitudes towards entrepreneurship have a significant effect on entrepreneurial intentions. TPBs are used as a basic theory to analyze attitudes towards entrepreneurship and entrepreneurial intentions. Previous research provides TPBs support as a theoretical basis for explaining and understanding the formation of attitudes that direct entrepreneurial intentions (Maes et al., 2014; Schlaegel & Koenig, 2014).

Furthermore, entrepreneurs must have confidence and strong confidence in the success of their businesses (Staniewski, 2016). Entrepreneurs who are not confident will feel hesitant to start or manage their business. Self-efficacy is a factor that forms confidence in individual entrepreneurship abilities (Farrukh et al., 2017). Self-efficacy mediates the influence of entrepreneurial knowledge and attitudes towards entrepreneurship on entrepreneurial intentions. Previous research from Oyugi (2015) and Wu et al. (2022) proves that self-efficacy can mediate the relationship between entrepreneurship education and entrepreneurial intention.

The researchers chose students in Indonesia as the subjects of the research. This is because younger students are expected to overcome social problems such as unemployment by starting entrepreneurship. Furthermore, data published by the Central Bureau of Statistics in February 2024 show that the open unemployment rate in Indonesia has decreased since 2021, whereas data on the working population by working hours has increased from 2021 to 2023. This result indicates a decrease in the unemployment rate. Previous research on entrepreneurial intentions has been conducted by Teixeira et al. (2018) and Jena (2020), covering several countries in Europe and India. Additionally, research on entrepreneurial intention in Indonesia still finds inconsistent results, as conducted by Efrata et al. (2016) and Kusumojanto et al. (2021). Based on these reasons, researchers want to determine the level of entrepreneurial intention among students in

Indonesia by taking into account the factors of entrepreneurial knowledge, attitudes towards entrepreneurship, and self-efficacy.

2. Literature Review and Hypothesis Development

Understanding how to start and operate a business is a fundamental concept of entrepreneurship education (Hoppe, 2016). According to George et al. (2016), entrepreneurial learning produces theories and ideas that help to identify and seize opportunities. Entrepreneurship education and training influence both the behaviors and plans to start and operate a firm (Vodă & Florea, 2019). Consequently, this study aims to understand how entrepreneurial knowledge affects entrepreneurial intention. Individuals familiar with entrepreneurship typically understand that there are possible intrinsic and extrinsic benefits associated with their endeavors, in addition to inherent hurdles. It has been shown that the level of interest in establishing a business positively correlates with acquiring entrepreneurial knowledge (Gieure et al., 2020). Empirical evidence indicates that entrepreneurial knowledge provides individuals with the necessary expertise to start new businesses.

H₁: Entrepreneurial Knowledge has A Positive Effect on Entrepreneurial Intention

Self-efficacy can influence the emergence of entrepreneurial interests. Self-efficacy is a person's ability to measure his ability to complete a task. According to Fuller et al. (2018) and Doanh and van Munawar (2019), self-efficacy is an individual's belief about his ability to carry out a task or perform an action necessary to achieve certain results. The importance of self-efficacy in presenting entrepreneurial interests has been proven in several studies, including those conducted by Cantù (2017) and Calvo et al. (2019). To be entrepreneurial, one must have self-efficacy in the heart. The motivation to become an entrepreneur is based on a belief in one's own potential to become an entrepreneur. Self-efficacy can also increase due to various factors such as experience, learning by direct observation, social persuasion, and psychological evaluation (A. M. H. Chen et al., 2020).

H₂: Entrepreneurial Knowledge has A Positive Effect on Self-Efficacy

Those with high self-efficacy have higher cognitive capacities (Chen, 2015). In another way, these individuals are more in control because they try to think ahead of the best and worst-case scenarios and can modify their plans accordingly. High-self-efficacy individuals can anticipate difficulties accomplishing their goals. According to Travis and Freeman (2017) and Hsu et al. (2019), the ambition to start a business positively correlates with self-efficacy. That is, an individual with high self-efficacy will have an incredible drive, strong intellectual base, and confidence in their ability to complete tasks. These traits may influence individuals' inclination to pursue entrepreneurship. Self-efficacy may increase entrepreneurial intention through unique cognitive and emotional processes (Morgenroth, 2015).

H₃: Self-Efficacy has A Positive Effect on Entrepreneurial Intention

Entrepreneurial knowledge does not always directly lead to an increase in entrepreneurial intentions (Lv et al., 2021). Entrepreneurial knowledge must cultivate a positive attitude and increase self-efficacy, which ultimately leads to an increase in entrepreneurial intentions (Liu et al., 2019). An increase in entrepreneurial self-efficacy rates and entrepreneurial desire is evidence of the level of entrepreneurial knowledge. Self-efficacy or confidence in carrying out an activity is capable of mediating the relationship between entrepreneurial knowledge variables and entrepreneurial intention (U. Yousaf et al., 2020). Entrepreneurship education can increase the efficacy of entrepreneurship through learning activities and preparing business plans, thereby increasing the intention and readiness for entrepreneurship. Previous research has shown that entrepreneurial knowledge affects entrepreneurial intention through self-efficacy (Jiatong et al., 2021; Wu et al., 2022).

H₄: Self-Efficacy Mediates the Effect on Entrepreneurial Knowledge on Entrepreneurial Intention

The decision to become an entrepreneur is considered voluntary and conscious (Rueda et al., 2015). An increasing number of studies show that the decision to pursue entrepreneurship is in line with the formation of entrepreneurial intentions (Zhang et al., 2014). According to TPB, because intention predicts action, attitude is considered capable of predicting and influencing intention. Behavioral intention results from attitude, and becomes a determinant of behavior, so it can be said that entrepreneurial attitude is a predictor arising from the existence of entrepreneurial intention. Entrepreneurial attitude is considered a better approach to describe entrepreneurship, since it measures the extent to which individuals tend positively or negatively to do something, including entrepreneurial intentions (Hui-Chen et al., 2014). According to O'Keefe (2016), attitudes differ from other individual traits because of their evaluative character towards specific targets. That is, attitude plays an important role in creating intention and is a determining factor in shaping behavior (Nguyen et al., 2019).

H₅: Attitude toward Entrepreneurship has A Positive Effect on Entrepreneurial Intention

Attitudes toward entrepreneurship are not directly owned by a person from birth, but are obtained from learning, direction, and experience. A positive attitude toward entrepreneurship is built by a positive mindset (Neck et al., 2023). When someone has this attitude, it will make him more determined and successful in entrepreneurship (Mason & Brown, 2014). Self-efficacy is able to provide confidence in the abilities possessed and become an important capital in starting a business. When a person has a positive attitude towards entrepreneurship, they will have the confidence to be entrepreneurial. Previous research has shown that attitudes can positively influence self-efficacy (Avramidis et al., 2019).

H₆: Attitude toward Entrepreneurship has A Positive Effect on Self-Efficacy

Self-efficacy and entrepreneurial intention are influenced by attitudes toward entrepreneurship. A person's desire to become an entrepreneur depends on their confidence in their capacity to engage in entrepreneurial activities, and vice versa (Osadolor et al., 2021). An entrepreneur with a mindset toward entrepreneurship typically possesses good self-efficacy (Schmutzler et al., 2019). Confidence in entrepreneurship might increase with positive attitudes in the field. When self-efficacy is high, you will be driven to launch your own company. Burnette et al. (2020) believe that self-efficacy helps individuals in the decision-making process for starting a new business. Thus, individuals with a level of entrepreneurial self-efficacy feel more entrepreneurial knowledge, mindset, attitude towards entrepreneurship, and creativity, thus encouraging the intention to engage in entrepreneurship.

H₇: Self-Efficacy Mediates the Effect on Attitude toward Entrepreneurship on Entrepreneurial Intention

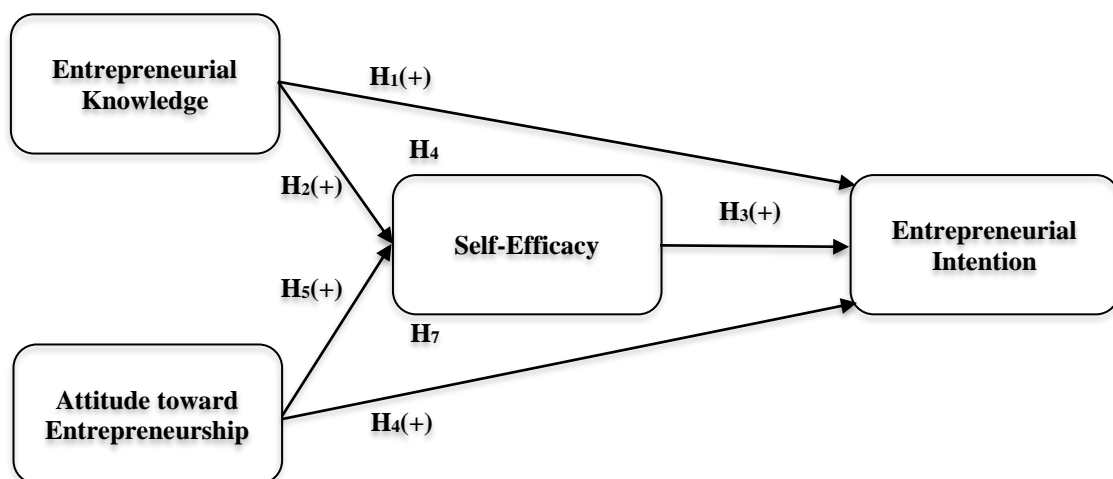


Figure 1. Research Framework

Figure 1 depicts the research framework, which shows the elements that influence Indonesian students' willingness to pursue entrepreneurship. Entrepreneurial knowledge and attitudes toward entrepreneurship are elements of research. Furthermore, self-efficacy traits mediate the relationship between entrepreneurial knowledge, attitudes toward entrepreneurship, and entrepreneurial intention.

3. Research Methodology

The population of this study was students from various regions of Indonesia. The sampling of respondents in this study used convenience sampling techniques with online questionnaire tools. This method was based on students who were suitable and worthy of use as research respondents. After the questionnaire was disseminated online, researchers obtained a sample of 95 respondents. The research questionnaire was distributed to respondents online and contained several statement items representing each research variable. The variable entrepreneurial knowledge adopts the statement items developed by Krueger et al. (2000) for a total of 10 statement items. The attitude variable towards entrepreneurship consisted of five statements adopted from Liñán et al. (2011). The entrepreneurial intention variable adopts a six-item statement from Liñán and Chen (2009). Finally, the self-control variable statement item was adopted from Bandura et al. (1999), for a total of eight items. Convergent validity was observed in the validity tests. The loading factor value for each indicator was used to calculate the outer model. According to Hair et al. (2014), an indicator is considered acceptable if its loading factor value is greater than 0.6. Composite reliability was used to examine the reliability of construct indicators. If both the Cronbach's alpha value and composite reliability value were above 0.7, the variable was considered good (Hair et al., 2014). Investigating mediation hypotheses using bootstrap resampling has become a standard practice. The p-values represent the results of the hypothesis test. The hypothesis is considered acceptable if the p-value is less than 0.05 (Chin, 2013).

4. Result and Discussion

Validity Test

Figure 2 illustrates the design of the research model. Based on the figure, it can be seen that out of 10 indicators of financial knowledge, six indicators remain. The attitude toward entrepreneurship variable eliminated only one of the five indicators. The self-efficacy variable had eight indicators, and the entrepreneurial intention variable had six indicators.

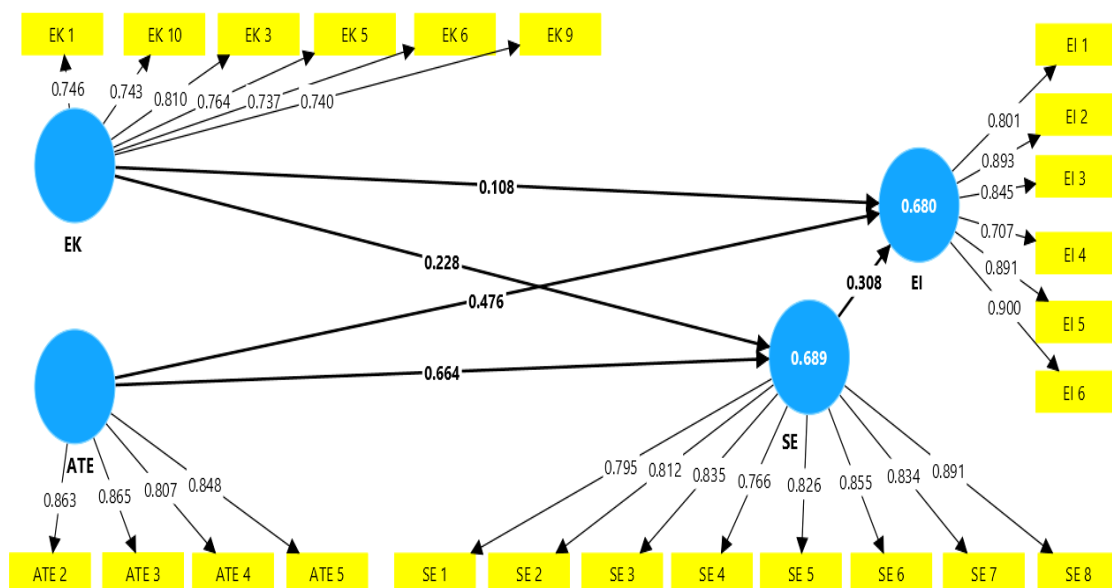


Figure 2. Measurement Model

Table 1 displays the results of validity testing for each indicator of entrepreneurial knowledge (EK), attitude toward entrepreneurship (ATE), self-efficacy (SE), and entrepreneurial intention (EI). Based on these results, it can be seen that there are four indicators of financial knowledge and one variable indicator of attitude towards entrepreneurship that must be eliminated. The loading factor values of the five indicators were < 0.6 .

Table 1. Validity Test Result

Indicator	Entrepreneurial Knowledge	Attitude toward Entrepreneurship	Self-Efficacy	Entrepreneurial Intention
EK 1	0.746			
EK 3	0.743			
EK 5	0.810			
EK 6	0.764			
EK 9	0.737			
EK 10	0.740			
ATE 2		0.863		
ATE 3		0.865		
ATE 4		0.807		
ATE 5		0.848		
SE 1			0.795	
SE 2			0.812	
SE 3			0.835	
SE 4			0.766	
SE 5			0.826	
SE 6			0.855	
SE 7			0.834	
SE 8			0.891	
EI 1				0.801
EI 2				0.893
EI 3				0.845
EI 4				0.707
EI 5				0.891
EI 6				0.900

Source: Primary Data Processed (2024)

Reliability Test

Table 2 shows the results of the reliability test for self-efficacy, entrepreneurial intention, entrepreneurial knowledge, and attitudes toward entrepreneurship. These findings support the conclusion that all study variables were trustworthy, as indicated by the composite reliability value of greater than 0.7 and the value of Cronbach's alpha.

Table 2. Reliability Test Result

Variable	Cronbach's Alpha	Composite Reliability
Entrepreneurial Knowledge	0.852	0.862
Attitude toward Entrepreneurship	0.868	0.871
Self-Efficacy	0.934	0.935
Entrepreneurial Intention	0.917	0.924

Source: Primary Data Processed (2024)

Hypothesis Test

Table 3 presents the results of the hypothesis tests. A p-value of more than 0.05 indicates no relationship between entrepreneurial knowledge and entrepreneurial intention, supporting the rejection of the first hypothesis. Entrepreneurial knowledge positively affects self-efficacy (the second hypothesis is supported). Entrepreneurial intention has been shown to benefit from self-efficacy (supporting the third hypothesis). A p-value of more than 0.05 indicates that self-efficacy does not mediate the relationship between entrepreneurial knowledge and entrepreneurial

intentions (the fourth hypothesis is not supported). The fifth hypothesis is supported: attitudes toward entrepreneurship positively impact entrepreneurial intention. Entrepreneurial attitudes positively affect self-efficacy (the sixth hypothesis is supported). Self-efficacy mediates the effect of entrepreneurial attitudes on entrepreneurial intention (seventh hypothesis is supported).

Table 3. Hypothesis Test Result

Hypothesis	Original Sample	Sample Mean	Standard Deviation	T Statistic	P Value
Entrepreneurial Knowledge → Entrepreneurial Intention	0.178	0.187	0.110	1.613	0.107
Entrepreneurial Knowledge → Self-Efficacy	0.228	0.241	0.087	2.614	0.009
Self-Efficacy → Entrepreneurial Intention	0.308	0.319	0.122	2.523	0.012
Entrepreneurial Knowledge → Self-Efficacy → Entrepreneurial Intention	0.070	0.079	0.046	1.543	0.123
Attitude toward Entrepreneurship → Entrepreneurial Intention	0.680	0.670	0.095	7.123	0.000
Attitude toward Entrepreneurship → Self-Efficacy	0.664	0.658	0.076	8.768	0.000
Attitude toward Entrepreneurship → Self-Efficacy → Entrepreneurial Intention	0.204	0.208	0.080	2.547	0.011

Source: Primary Data Processed (2024)

Discussion

The Effect of Entrepreneurial Knowledge on Entrepreneurial Intention

In the modern economy, knowledge is arguably the most strategic and important resource for companies. Knowledge not only affects the performance of a nascent company but also affects its growth and survival (Tseng & Lee, 2014). Knowledge is the most important resource in entrepreneurial initiatives (Scaringella & Radziwon, 2018). Knowledge is an important predictor because it is generally viewed as a determinant of behavior or action (Vicente-Molina et al., 2018). The results of this study show that entrepreneurial knowledge has no effect on entrepreneurial intention, thus contradicting the statement that entrepreneurial knowledge is at the heart of entrepreneurship and significantly affects the intention to create a business (Farani et al., 2017). Roxas (2014) combines entrepreneurial knowledge with the TPBs because it reflects the level of knowledge and awareness that individuals have regarding various aspects of building and managing new businesses. In general, high knowledge provides greater awareness of the existence of career options, including entrepreneurship.

The Effect of Entrepreneurial Knowledge on Self-Efficacy

The level of education and knowledge that a person possesses tends to strengthen their confidence, ability, and confidence to start a business (Boldureanu et al., 2020). Functional knowledge, such as financial management and marketing, has been proven to create an empowering effect on individuals, thereby increasing self-efficacy. Self-efficacy can also increase due to various factors such as experience, learning by direct observation, social persuasion, and psychological evaluation (Chen et al., 2020). A high level of understanding of a business builds an individual's confidence in facing entrepreneurial challenges (Shahzad et al., 2021). In other words, the more knowledge a person has, the more effective he/she is with respect to business ownership. Research conducted by Khan et al. (2019) proved that entrepreneurship knowledge has a positive influence on self-efficacy.

The Effect of Self-Efficacy on Entrepreneurial Intention

People with high levels of self-efficacy usually feel that they can make changes and believe that they have control over their thoughts and actions (Schwarzer, 2014). Self-efficacy is one of the factors most frequently examined to understand entrepreneurial intention (Cardon & Kirk, 2015). Wang et al. (2016) argues that managerial and risk-taking are two dimensions of self-efficacy commonly associated with entrepreneurial intention. Bullough et al. (2014) and Piperopoulos and Dimov (2015) showed that self-efficacy can be applied to the formation of new ventures. The impact of self-efficacy on entrepreneurial career intentions causes educators to provide young people with insight into various opportunities such as business plans, running a business, working with others to improve their skills, and confidence in various tasks and roles as entrepreneurs. Thus, individuals who believe in their ability to create new businesses drive their intention to do so (Piperopoulos & Dimov, 2015).

The Mediating Role of Self-Efficacy: The Effect of Entrepreneurial Knowledge on Entrepreneurial Intention

Entrepreneurial knowledge affects self-efficacy and entrepreneurial intentions (Ciuchta & Finch, 2019). An individual's ambition to become an entrepreneur depends on how confident they are in their capacity to engage in entrepreneurial activities and vice versa. Entrepreneurs with entrepreneurial knowledge usually have good self-efficacy (Puni et al., 2018). An individual's confidence may increase because of their high level of entrepreneurial skills. When self-efficacy is very high, an individual strongly desires to launch a business (Liu et al., 2019). The study's findings show that self-efficacy does not mediate the relationship between entrepreneurial knowledge and intentions. This contrasts with earlier studies by Hoang et al. (2021), who showed a mediated relationship between entrepreneurial knowledge, entrepreneurial intention, and self-efficacy.

The Effect of Attitude toward Entrepreneurship on Entrepreneurial Intention

An individual's attitude toward entrepreneurship includes evaluative and emotional elements, such as benefits and drawbacks, and describes how they perceive entrepreneurship (Botsaris & Vamvaka, 2016). In addition, Kautonen et al. (2015), TPB favors a positive relationship between attitudes toward entrepreneurship and entrepreneurial intentions. The theory states that an individual's attitude toward entrepreneurship is influenced by their confidence in their abilities. Studies by Zapkau et al. (2015) and Soomro and Shah (2015) show that an entrepreneurial mentality positively affects the ambition to start a business. Positive or negative opinions about entrepreneurship indicate an individual's attitude toward it (Meijer et al., 2015).

The Effect of Attitude toward Entrepreneurship on Self-Efficacy

An individual does not naturally possess an attitude toward entrepreneurship; instead, it is acquired through education, guidance, and experience. A positive mindset fosters a positive attitude toward entrepreneurship (Neck et al., 2023). An individual with this mindset is more driven and successful in business (Mason & Brown, 2014). Self-efficacy is a valuable resource for launching a business because it instills confidence in one's abilities. A person will be confident and capable of becoming entrepreneurial if they have a favorable attitude towards it. Wang et al. (2016) in their research proved that openness, caution, and neuroticism have a significant effect on self-efficacy.

The Mediating Role of Self-Efficacy: The Effect of Attitude toward Entrepreneurship on Entrepreneurial Intention

Attitude towards entrepreneurship influences entrepreneurial intention and self-efficacy. A person's self-efficacy in their ability to carry out entrepreneurial activities will affect their intention in entrepreneurship, and vice versa (Osadolor et al., 2021). Good self-efficacy is usually possessed by an entrepreneur with an attitude towards entrepreneurship (Schmutzler et al., 2019). A positive attitude toward entrepreneurship can increase one's confidence in entrepreneurship.

Individuals have a strong desire to start a business when they have high self-efficacy (Gielnik et al., 2019). Yang (2014) and Wardana et al. (2020) said that entrepreneurial knowledge makes individuals more skilled in handling business activities as well as developing entrepreneurship, and ultimately leads to entrepreneurial self-efficacy. Therefore, individuals with higher levels of entrepreneurial self-efficacy can easily identify opportunities and create an entrepreneurial mindset, ultimately encouraging the intention to become entrepreneurial.

5. Conclusion

This study shows that, while entrepreneurial knowledge positively impacts self-efficacy, entrepreneurial intention is ignored. Self-efficacy positively influences entrepreneurial intention but does not mediate the relationship between knowledge and intention. Next, self-efficacy and entrepreneurial intention were positively impacted by attitudes toward entrepreneurship. Self-efficacy mediates the relationship between attitudes toward entrepreneurship and entrepreneurial intention. This study has several limitations, such as the small sample size, so it is not able to represent the answers of all young people, especially students in Indonesia. In addition, this study only considered entrepreneurial knowledge factors, attitudes towards entrepreneurship, and self-efficacy to measure entrepreneurial intentions. Therefore, future research could increase the number of research samples or consider other factors that are thought to affect entrepreneurial intention. Factors that are thought to influence entrepreneurial intentions include social and economic changes (Miralles et al., 2016), culture (Yousaf et al., 2022), and entrepreneurship training (Bhatti et al., 2021).

REFERENCES

- Abun, D., Belandres, M. L. V., Grace L. Foronda, S. L., Agoot, F., & Magallanez, T. (2018). Measuring entrepreneurial knowledge and entrepreneurial intention of ABM Grade XII, Senior High School students of Divine Word Colleges in Region I, Philippines. *International Journal of Educational Research*, 2(1). <https://doi.org/10.53555/epihjer.v2i1.51>
- Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies*, 2(4). <https://doi.org/10.1002/hbe2.195>
- Akeju, K. F., & Olanipekun, D. B. (2014). Unemployment and economic growth in Nigeria. *Journal of Economics and Sustainable Development*, 5(4), 138–144.
- Avramidis, E., Toulia, A., Tsihouridis, C., & Strogilos, V. (2019). Teachers' attitudes towards inclusion and their self-efficacy for inclusive practices as predictors of willingness to implement peer tutoring. *Journal of Research in Special Educational Needs*, 19(S1). <https://doi.org/10.1111/1471-3802.12477>
- Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G. (2016). *EntreComp: The entrepreneurship competence framework*. Luxembourg: Publication Office of the European Union, 10.
- Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review. *Entrepreneurship: Theory and Practice*, 38(2). <https://doi.org/10.1111/etap.12095>
- Bhatti, M. A., Al Dughan, M., Mat Saat, S. A., Juhari, A. S., & Alshagawi, M. (2021). Entrepreneurial intentions among women: Does entrepreneurial training and education matters? (Pre- and post-evaluation of psychological attributes and its effects on entrepreneurial intention). *Journal of Small Business and Enterprise Development*, 28(2). <https://doi.org/10.1108/JSBED-09-2019-0305>
- Boldureanu, G., Ionescu, A. M., Bercu, A. M., Bedrule-Grigoruță, M. V., & Boldureanu, D. (2020). Entrepreneurship education through successful entrepreneurial models in higher education institutions. *Sustainability (Switzerland)*, 12(3). <https://doi.org/10.3390/su12031267>
- Botsaris, C., & Vamvaka, V. (2016). Attitude toward entrepreneurship: Structure, prediction from behavioral beliefs, and relation to entrepreneurial intention. *Journal of the Knowledge Economy*, 7(2). <https://doi.org/10.1007/s13132-014-0227-2>

- Bullough, A., Renko, M., & Myatt, T. (2014). Danger zone entrepreneurs: The importance of resilience and self-efficacy for entrepreneurial intentions. *Entrepreneurship: Theory and Practice*, 38(3). <https://doi.org/10.1111/etap.12006>
- Burnette, J. L., Pollack, J. M., Forsyth, R. B., Hoyt, C. L., Babij, A. D., Thomas, F. N., & Coy, A. E. (2020). A growth mindset intervention: enhancing students' entrepreneurial self-efficacy and career development. *Entrepreneurship: Theory and Practice*, 44(5). <https://doi.org/10.1177/1042258719864293>
- Calvo, N., Rodeiro-Pazos, D., Rodríguez-Gulías, M. J., & Fernández-López, S. (2019). What knowledge management approach do entrepreneurial universities need? *Information Systems*, 85. <https://doi.org/10.1016/j.is.2019.06.002>
- Cantù, C. (2017). Entrepreneurial knowledge spillovers: Discovering opportunities through understanding mediated spatial relationships. *Industrial Marketing Management*, 61, 30–42. <https://doi.org/10.1016/j.indmarman.2016.07.002>
- Cardon, M. S., & Kirk, C. P. (2015). Entrepreneurial passion as mediator of the self-efficacy to persistence relationship. *Entrepreneurship Theory and Practice*, 39(5), 1027–1050. <https://doi.org/10.1111/etap.12089>
- Chen, A. M. H., Yehle, K. S., Plake, K. S., Rathman, L. D., Heinle, J. W., Frase, R. T., Anderson, J. G., & Bentley, J. (2020). The role of health literacy, depression, disease knowledge, and self-efficacy in self-care among adults with heart failure: An updated model. *Heart and Lung*, 49(6). <https://doi.org/10.1016/j.hrtlng.2020.08.004>
- Chen, M. F. (2015). Self-efficacy or collective efficacy within the cognitive theory of stress model: Which more effectively explains people's self-reported proenvironmental behavior? *Journal of Environmental Psychology*, 42. <https://doi.org/10.1016/j.jenvp.2015.02.002>
- Chin, W. W. (2013). Commentary issues and opinion on structural equation modeling. *MIS Quarterly*, 22(1).
- Ciuchta, M. P., & Finch, D. (2019). The mediating role of self-efficacy on entrepreneurial intentions: Exploring boundary conditions. *Journal of Business Venturing Insights*, 11. <https://doi.org/10.1016/j.jbvi.2019.e00128>
- do Paço, A., Ferreira, J. M., Raposo, M., Rodrigues, R. G., & Dinis, A. (2015). Entrepreneurial intentions: Is education enough? *International Entrepreneurship and Management Journal*, 11(1). <https://doi.org/10.1007/s11365-013-0280-5>
- Doanh, D. C., & van Munawar, T. (2019). Entrepreneurial self-efficacy and intention among Vietnamese students: A meta-analytic path analysis based on the theory of planned behaviour. *Management Science Letters*, 9(11). <https://doi.org/10.5267/j.msl.2019.6.007>
- Efrata, T. C., Hadiwidjojo, D., & Aisjah, S. (2016). Entrepreneurship education and entrepreneurial role models: How do they affect entrepreneurial intentions? *Australian Journal of Basic and Applied Sciences*, 10(8).
- Farani, A. Y., Karimi, S., & Motaghd, M. (2017). The role of entrepreneurial knowledge as a competence in shaping Iranian students' career intentions to start a new digital business. *European Journal of Training and Development*, 41(1). <https://doi.org/10.1108/EJTD-07-2016-0054>
- Farrukh, M., Khan, A. A., Shahid Khan, M., Ravan Ramzani, S., & Soladoye, B. S. A. (2017). Entrepreneurial intentions: The role of family factors, personality traits and self-efficacy. *World Journal of Entrepreneurship, Management and Sustainable Development*, 13(4). <https://doi.org/10.1108/wjemsd-03-2017-0018>
- Fuller, B., Liu, Y., Bajaba, S., Marler, L. E., & Pratt, J. (2018). Examining how the personality, self-efficacy, and anticipatory cognitions of potential entrepreneurs shape their entrepreneurial intentions. *Personality and Individual Differences*, 125. <https://doi.org/10.1016/j.paid.2018.01.005>
- George, N. M., Parida, V., Lahti, T., & Wincent, J. (2016). A systematic literature review of entrepreneurial opportunity recognition: Insights on influencing factors. *International Entrepreneurship and Management Journal*, 12(2). <https://doi.org/10.1007/s11365-014-0347-y>

- Gielnik, M. M., Bledow, R., & Stark, M. S. (2019). A dynamic account of self-efficacy in entrepreneurship. *Journal of Applied Psychology*. <https://doi.org/10.1037/apl0000451>
- Gieure, C., Benavides-Espinosa, M. del M., & Roig-Dobón, S. (2020). The entrepreneurial process: The link between intentions and behavior. *Journal of Business Research*, 112. <https://doi.org/10.1016/j.jbusres.2019.11.088>
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modelling (PLS-SEM). *European Business Review*, 26(2), 106–121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Hall, R. E., & Schulhofer-Wohl, S. (2018). Measuring job-finding rates and matching efficiency with heterogeneous job-seekers. *American Economic Journal: Macroeconomics*, 10(1). <https://doi.org/10.1257/mac.20170061>
- Hoang, G., Le, T. T. T., Tran, A. K. T., & Du, T. (2021). Entrepreneurship education and entrepreneurial intentions of university students in Vietnam: the mediating roles of self-efficacy and learning orientation. *Education and Training*, 63(1). <https://doi.org/10.1108/ET-05-2020-0142>
- Hoppe, M. (2016). Policy and entrepreneurship education. *Small Business Economics*, 46(1). <https://doi.org/10.1007/s11187-015-9676-7>
- Hsu, D. K., Burmeister-Lamp, K., Simmons, S. A., Foo, M. Der, Hong, M. C., & Pipes, J. D. (2019). “I know I can, but I don’t fit”: Perceived fit, self-efficacy, and entrepreneurial intention. *Journal of Business Venturing*, 34(2). <https://doi.org/10.1016/j.jbusvent.2018.08.004>
- Hui-Chen, C., Kuen-Hung, T., & Chen-Yi, P. (2014). The entrepreneurial process: An integrated model. *International Entrepreneurship and Management Journal*, 10(4). <https://doi.org/10.1007/s11365-014-0305-8>
- Jena, R. K. (2020). Measuring the impact of business management Student’s attitude towards entrepreneurship education on entrepreneurial intention: A case study. *Computers in Human Behavior*, 107. <https://doi.org/10.1016/j.chb.2020.106275>
- Jiatong, W., Murad, M., Bajun, F., Tufail, M. S., Mirza, F., & Rafiq, M. (2021). Impact of entrepreneurial education, mindset, and creativity on entrepreneurial intention: Mediating role of entrepreneurial self-efficacy. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.724440>
- Joseph, G., Aboobaker, N., & K.A, Z. (2023). Entrepreneurial cognition and premature scaling of startups: a qualitative analysis of determinants of start-up failures. *Journal of Entrepreneurship in Emerging Economies*, 15(1). <https://doi.org/10.1108/JEEE-11-2020-0412>
- Kautonen, T., van Gelderen, M., & Fink, M. (2015). Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrepreneurship: Theory and Practice*, 39(3). <https://doi.org/10.1111/etap.12056>
- Khan, M. M., Memon, Z., & Kumar, S. (2019). Celebrity endorsement and purchase intentions: The role of perceived quality and brand loyalty. *Market Forces College of Management Sciences*, 14(2).
- Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5). [https://doi.org/10.1016/S0883-9026\(98\)00033-0](https://doi.org/10.1016/S0883-9026(98)00033-0)
- Kusumojanto, D. D., Wibowo, A., Kustiandi, J., & Narmaditya, B. S. (2021). Do entrepreneurship education and environment promote students’ entrepreneurial intention? The role of entrepreneurial attitude. *Cogent Education*, 8(1). <https://doi.org/10.1080/2331186X.2021.1948660>
- Küttim, M., Kallaste, M., Venesaar, U., & Kiis, A. (2014). Entrepreneurship education at university level and students’ entrepreneurial intentions. *Procedia - Social and Behavioral Sciences*, 110. <https://doi.org/10.1016/j.sbspro.2013.12.910>
- Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship: Theory and Practice*, 33(3). <https://doi.org/10.1111/j.1540-6520.2009.00318.x>

- Liñán, F., Urbano, D., & Guerrero, M. (2011). Regional variations in entrepreneurial cognitions: Start-up intentions of university students in Spain. *Entrepreneurship and Regional Development*, 23(3–4). <https://doi.org/10.1080/08985620903233929>
- Liu, X., Lin, C., Zhao, G., & Zhao, D. (2019). Research on the effects of entrepreneurial education and entrepreneurial self-efficacy on college students' entrepreneurial intention. *Frontiers in Psychology*, 10(APR). <https://doi.org/10.3389/fpsyg.2019.00869>
- Lv, Y., Chen, Y., Sha, Y., Wang, J., An, L., Chen, T., Huang, X., Huang, Y., & Huang, L. (2021). How entrepreneurship education at universities influences entrepreneurial intention: Mediating effect based on entrepreneurial competence. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.655868>
- Maes, J., Leroy, H., & Sels, L. (2014). Gender differences in entrepreneurial intentions: A TPB multi-group analysis at factor and indicator level. *European Management Journal*, 32(5). <https://doi.org/10.1016/j.emj.2014.01.001>
- Mason, C., & Brown, R. (2014). Entrepreneurial ecosystems and growth oriented entrepreneurship. *Oecd*.
- Meijer, S. S., Catacutan, D., Sileshi, G. W., & Nieuwenhuis, M. (2015). Tree planting by smallholder farmers in Malawi: Using the theory of planned behaviour to examine the relationship between attitudes and behaviour. *Journal of Environmental Psychology*, 43. <https://doi.org/10.1016/j.jenvp.2015.05.008>
- Miralles, F., Giones, F., & Riverola, C. (2016). Evaluating the impact of prior experience in entrepreneurial intention. *International Entrepreneurship and Management Journal*, 12(3). <https://doi.org/10.1007/s11365-015-0365-4>
- Morgenroth, T. (2015). *How role models affect role aspirants' motivation and goals*. University of Exeter (United Kingdom).
- Neck, H. M., Neck, C. P., & Murray, E. L. (2023). *Entrepreneurship: The practice and mindset*. Sage Publications.
- Nguyen, A. T., Do, T. H. H., Vu, T. B. T., Dang, K. A., & Nguyen, H. L. (2019). Factors affecting entrepreneurial intentions among youths in Vietnam. *Children and Youth Services Review*, 99. <https://doi.org/10.1016/j.childyouth.2019.01.039>
- O'Keefe, D. J. (2016). Persuasion and social influence. *The International Encyclopedia of Communication Theory and Philosophy*, 1–19.
- Osadolor, V., Agbaeze, E. K., Isichei, E. E., & Olabosinde, S. T. (2021). Entrepreneurial self-efficacy and entrepreneurial intention: The mediating role of the need for independence. *Journal of Entrepreneurship, Management and Innovation*, 17(4). <https://doi.org/10.7341/20211744>
- Oyugi, J. L. (2015). The Mediating effect of self-efficacy on the relationship between entrepreneurship education and entrepreneurial intentions of university students. *Journal of Entrepreneurship, Management and Innovation*, 11(2). <https://doi.org/10.7341/20151122>
- Piperopoulos, P., & Dimov, D. (2015). Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions. *Journal of Small Business Management*, 53(4). <https://doi.org/10.1111/jsbm.12116>
- Puni, A., Anlesinya, A., & Korsorku, P. D. A. (2018). Entrepreneurial education, self-efficacy and intentions in Sub-Saharan Africa. *African Journal of Economic and Management Studies*, 9(4). <https://doi.org/10.1108/AJEMS-09-2017-0211>
- Ridha, M. R., & Parwanto, N. B. (2020). The effect of foreign direct investment, human development and macroeconomic condition on economic growth: Evidence from Indonesia. *Journal of Indonesian Applied Economics*, 8(2), 46–54. <https://doi.org/10.21776/ub.jiae.2020.008.02.5>
- Roxas, B. (2014). Effects of entrepreneurial knowledge on entrepreneurial intentions: A longitudinal study of selected South-east Asian business students. *Journal of Education and Work*, 27(4). <https://doi.org/10.1080/13639080.2012.760191>
- Rueda, S., Moriano, J. A., & Liñán, F. (2015). Validating a theory of planned behavior questionnaire to measure entrepreneurial intentions. *Developing, Shaping and Growing Entrepreneurship*. <https://doi.org/10.4337/9781784713584.00010>
- Scaringella, L., & Radziwon, A. (2018). Innovation, entrepreneurial, knowledge, and business ecosystems: Old wine in new bottles? *Technological Forecasting and Social Change*, 136.

- <https://doi.org/10.1016/j.techfore.2017.09.023>
- Schlaegel, C., & Koenig, M. (2014). Determinants of entrepreneurial intent: A meta-analytic test and integration of competing models. *Entrepreneurship: Theory and Practice*, 38(2). <https://doi.org/10.1111/etap.12087>
- Schmutzler, J., Andonova, V., & Diaz-Serrano, L. (2019). How context shapes entrepreneurial self-efficacy as a driver of entrepreneurial intentions: A multilevel approach. *Entrepreneurship: Theory and Practice*, 43(5). <https://doi.org/10.1177/1042258717753142>
- Schwarzer, R. (2014). *Self-efficacy: Thought control of action*. Taylor & Francis.
- Shahzad, M. F., Khan, K. I., Saleem, S., & Rashid, T. (2021). What factors affect the entrepreneurial intention to start-ups? The role of entrepreneurial skills, propensity to take risks, and innovativeness in open business models. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(3). <https://doi.org/10.3390/JOITMC7030173>
- Sondari, M. C. (2014). Is entrepreneurship education really needed?: Examining the antecedent of entrepreneurial career intention. *Procedia - Social and Behavioral Sciences*, 115. <https://doi.org/10.1016/j.sbspro.2014.02.414>
- Soomro, B. A., & Shah, N. (2015). Developing attitudes and intentions among potential entrepreneurs. *Journal of Enterprise Information Management*, 28(2). <https://doi.org/10.1108/JEIM-07-2014-0070>
- Staniewski, M. W. (2016). The contribution of business experience and knowledge to successful entrepreneurship. *Journal of Business Research*, 69(11). <https://doi.org/10.1016/j.jbusres.2016.04.095>
- Teixeira, S. J., Casteleiro, C. M. L., Rodrigues, R. G., & Guerra, M. D. (2018). Entrepreneurial intentions and entrepreneurship in European countries. *International Journal of Innovation Science*, 10(1). <https://doi.org/10.1108/IJIS-07-2017-0062>
- Travis, J., & Freeman, E. (2017). Predicting entrepreneurial intentions: Incremental validity of proactive personality and entrepreneurial self-efficacy as a moderator. *Journal of Entrepreneurship Education*, 20(1).
- Tseng, S. M., & Lee, P. S. (2014). The effect of knowledge management capability and dynamic capability on organizational performance. *Journal of Enterprise Information Management*, 27(2). <https://doi.org/10.1108/JEIM-05-2012-0025>
- Urban, B. (2020). Entrepreneurial alertness, self-efficacy and social entrepreneurship intentions. *Journal of Small Business and Enterprise Development*, 27(3). <https://doi.org/10.1108/JSBED-08-2019-0285>
- Vamvaka, V., Stoforos, C., Palaskas, T., & Botsaris, C. (2020). Attitude toward entrepreneurship, perceived behavioral control, and entrepreneurial intention: Dimensionality, structural relationships, and gender differences. *Journal of Innovation and Entrepreneurship*, 9(1). <https://doi.org/10.1186/s13731-020-0112-0>
- Vicente-Molina, M. A., Fernández-Sainz, A., & Izagirre-Olaizola, J. (2018). Does gender make a difference in pro-environmental behavior? The case of the Basque Country University students. *Journal of Cleaner Production*, 176. <https://doi.org/10.1016/j.jclepro.2017.12.079>
- Vodă, A. I., & Florea, N. (2019). Impact of personality traits and entrepreneurship education on entrepreneurial intentions of business and engineering students. *Sustainability (Switzerland)*, 11(4). <https://doi.org/10.3390/SU11041192>
- Wang, J. H., Chang, C. C., Yao, S. N., & Liang, C. (2016). The contribution of self-efficacy to the relationship between personality traits and entrepreneurial intention. *Higher Education*, 72(2). <https://doi.org/10.1007/s10734-015-9946-y>
- Wardana, L. W., Narmaditya, B. S., Wibowo, A., Mahendra, A. M., Wibowo, N. A., Harwida, G., & Rohman, A. N. (2020). The impact of entrepreneurship education and students' entrepreneurial mindset: The mediating role of attitude and self-efficacy. *Heliyon*, 6(9). <https://doi.org/10.1016/j.heliyon.2020.e04922>
- Wu, L., Jiang, S., Wang, X., Yu, L., Wang, Y., & Pan, H. (2022). Entrepreneurship education and entrepreneurial intentions of college students: The mediating role of entrepreneurial self-efficacy and the moderating role of entrepreneurial competition experience. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.727826>

- Yang, J. H. (2014). Effect of entrepreneurial education on entrepreneurial intention of university students: Focused on mediating effect of self-efficacy and entrepreneurial motivation. *Asia-Pacific Journal of Business Venturing and Entrepreneurship*, 9(6), 65–77.
- Yousaf, H. Q., Munawar, S., Ahmed, M., & Rehman, S. (2022). The effect of entrepreneurial education on entrepreneurial intention: The moderating role of culture. *International Journal of Management Education*, 20(3). <https://doi.org/10.1016/j.ijme.2022.100712>
- Yousaf, U., Ali, S. A., Ahmed, M., Usman, B., & Sameer, I. (2020). From entrepreneurial education to entrepreneurial intention: A sequential mediation of self-efficacy and entrepreneurial attitude. *International Journal of Innovation Science*, 13(3). <https://doi.org/10.1108/IJIS-09-2020-0133>
- Zapkau, F. B., Schwens, C., Steinmetz, H., & Kabst, R. (2015). Disentangling the effect of prior entrepreneurial exposure on entrepreneurial intention. *Journal of Business Research*, 68(3). <https://doi.org/10.1016/j.jbusres.2014.08.007>
- Zhang, Y., Duysters, G., & Cloudt, M. (2014). The role of entrepreneurship education as a predictor of university students' entrepreneurial intention. *International Entrepreneurship and Management Journal*, 10(3). <https://doi.org/10.1007/s11365-012-0246-z>