
A study on the relationship between entrepreneurship education and entrepreneurial intention

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Abstract: Based on the cognitive theory and theory of planned behaviour, this paper analyses the influence of entrepreneurship education on entrepreneurial intention and the effect of entrepreneurial risk perception and entrepreneurial self-efficacy on the undergraduates' experiences. The results show that entrepreneurial education can effectively promote the formation of entrepreneurial intention. The three dimensions of entrepreneurship education (i.e., entrepreneurial cognition, entrepreneurial ability, and innovative spirit) have a positive impact on entrepreneurial intentions. Entrepreneurial risk perception and entrepreneurial self-efficacy have an intermediary effect on entrepreneurship education and entrepreneurial intention. The research results reveal the effective boundary of entrepreneurship education, explore and prove the specific mechanism of entrepreneurship education on entrepreneurial intention, and help to find effective ways for entrepreneurship education to promote entrepreneurship.

Keywords: entrepreneurship education; entrepreneurial risk perception; entrepreneurial self-efficacy; entrepreneurial intention.

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1 Introduction

The report of the Nineteenth Congress proposed that, by 2035, China should realise socialist modernisation. Innovating entrepreneurship education, as an important part of the socialist modernisation education sector, is of great significance to the realisation of an innovative national strategy. As the core institutions of innovation and entrepreneurship, colleges and universities should guide, promote, and serve innovation and entrepreneurship in terms of technical support. Through entrepreneurship education, college students’ aspirations for entrepreneurship should be stimulated to provide an environment for the reserve of new technologies and talents. The successful case of entrepreneurship education research at the Berson Business School shows that entrepreneurship can be taught. Appropriate entrepreneurship education can stimulate students’ entrepreneurial enthusiasm and enhance their entrepreneurial skills. Drucker believes that entrepreneurship is neither a science nor an art. Entrepreneurship is a kind of practice. Entrepreneurship education aims to release students’ entrepreneurial spirit, cultivate students’ practical thinking, and stimulate students’ entrepreneurial desire. The existing research on entrepreneurial education theory also shows that entrepreneurship education can stimulate entrepreneurial intention and enhance entrepreneurial ability.

Planning behaviour is often used to explain behaviours that are rare, difficult to observe, or have unpredictable time lags (Dutta et al., 2015). Entrepreneurship is a typical planning behaviour and intention is considered to be an effective predictor of individual program behaviour (Krueger, 1993). Therefore, entrepreneurial intention is considered as a prerequisite and an important part of the entrepreneurial process. The concept of intention stems from social psychology. It is a state of mind. It encourages individuals to think and make decisions about important strategies; in recent times, it also encourages individuals to invest a lot of relationships and resources to achieve goals (Bird, 1988). Thompson believes that the entrepreneurial intention is a conscious planning act to achieve the promise of starting a new company in the future (Thompson, 2009). Entrepreneurial intention does not guarantee that entrepreneurial activity will occur,

but entrepreneurial intention is the starting factor for entrepreneurial activities (Bierly et al., 2000). Entrepreneurial education is a fertile ground for fostering entrepreneurial intention. Many studies show that there is a significant positive relationship between the level of student entrepreneurial intention and entrepreneurship education. Of course, there are also some studies that have no relationship or negative influence on entrepreneurial education and entrepreneurial intention. The difference in research results shows that the mechanism of the relationship between entrepreneurship education and entrepreneurial intention needs to be further understood; the factors affecting the relationship between the two need to be further explored.

In addition, the study of adjustment variables between entrepreneurship education and entrepreneurial intention is not yet clear. Analysed data on university students from six provinces found that entrepreneurial risk perception and entrepreneurial self-efficacy have mediating effects on entrepreneurial passion and entrepreneurial intention. Rich knowledge and good self-motivation helps to counter the risk of entrepreneurship and enhance the risk defense ability (Krueger et al., 2000). Li Min believe that individual entrepreneurial risk perception factors have an impact on entrepreneurial intention (Higgins, 1997). Systematic literature reviewists find that entrepreneurship education can enhance entrepreneurial intention and that entrepreneurial risk perception and entrepreneurial self-efficacy can increase the possibility of entrepreneurial success. However, entrepreneurship education can enhance entrepreneurial intention, while entrepreneurship risk perception and entrepreneurial self-efficacy play a regulatory role which requires further study.

Cognitive theory believes that entrepreneurial cognition is the primary factor in judging entrepreneurs. It is a pre-set variable of entrepreneurial intention. It strengthens entrepreneurial cognition and enhances entrepreneurial intention through entrepreneurship education, entrepreneurial risk perception, and entrepreneurial self-efficacy, from the perspective of cognitive theory, these play a regulatory role. The current research available cannot fully meet the needs of research due to three problems. Firstly, the mechanisms of entrepreneurship education to promote entrepreneurial intention research and of entrepreneurship cognitive entrepreneurial intention to promote asymmetry are not clear. Secondly, entrepreneurship education and entrepreneurial intention are the subject of many research papers, but the introduction of entrepreneurial risk perception and entrepreneurial self-efficacy as mediator variables are less frequently analysed. Thirdly, there is a lack of literature on the entrepreneurial intention of college students based on the theory of cognitive theory and planned behaviour.

The text starts from the theory of cognitive theory and planned behaviour and conducts research based on the Chinese university student group. It analyses the relationship among entrepreneurship education, entrepreneurial intention, entrepreneurial risk perception, and entrepreneurial self-efficacy, as well as studies the intermediary role of entrepreneurial risk perception and entrepreneurial self-efficacy. Through constructing a model between research factors and using the survey data of college students from the provinces of Beijing, Tianjin, Jiangsu, Zhejiang, Shanghai, and Guangdong who are currently more active in entrepreneurship to conduct empirical analysis, this study has made contributions which are as follows, Firstly, intention is based on the research scope of cognitive, planning, emotional, and performance perspectives. Secondly, it demonstrates that entrepreneurship education can enhance entrepreneurial intention

and enhance the ability of university students to resist risks. Thirdly, it can effectively enhance entrepreneurial intention by improving self-efficacy. Fourthly, it uses interdisciplinary subjects. Knowledge introduces the concept of social psychology. Planned behaviours link entrepreneurship education with entrepreneurial intention to provide a reference for subsequent entrepreneurial research.

2 Theory

2.1 *Entrepreneurship education and entrepreneurial intention*

Entrepreneurship education is through the education of basic skills and related knowledge, so that the educated has unique, innovative, and creative capabilities. Individuals can either be employed or self-employed (Bridge et al., 2010). Entrepreneurial intention is defined as the mental state of entrepreneurs who consciously devote their time and energy to specific goals, create new businesses or create new values, and consciously learn to act in the future (Dutta et al., 2011; Liñán et al., 2011). Entrepreneurial education aims to stimulate entrepreneurial intention. In college students, there was a significant positive correlation between entrepreneurship education and entrepreneurial behaviour. Students who accepted entrepreneurship education had a stronger desire for entrepreneurship. Studies found that the entrepreneurial intention and motivation of students receiving entrepreneurship education are better than those of students who have not received entrepreneurial education. Entrepreneurship education has a positive impact on entrepreneurial cognition (Mercier et al., 2012). Rideout and Gray (2013) believe that entrepreneurial behaviour is determined by the intention of entrepreneurship, and entrepreneurial intention is influenced by entrepreneurship education. It is evident that many scholars, both at home and abroad, believe that there is a correlation between entrepreneurial education and entrepreneurial intention. Only with entrepreneurial intention is it possible to start entrepreneurial behaviour, and entrepreneurship education is a leading factor in cultivating entrepreneurial abilities and interests and initiating entrepreneurial intentions. Therefore, the text analyses the relationship between entrepreneurial education and entrepreneurial intention from the three dimensions of entrepreneurial cognition, entrepreneurial ability, and innovative spirit. This paper proposes the following assumptions:

Hypothesis 1: Entrepreneurial education has a positive correlation with entrepreneurial intention.

In addition, the following hypotheses are proposed based on the three dimensions of entrepreneurship, as well as entrepreneurship and innovation in entrepreneurship education: Hypothesis 1a. There is a positive correlation between entrepreneurial cognition and entrepreneurial intention.

Hypothesis 1b: There is a positive correlation between entrepreneurial ability and entrepreneurial intention.

Hypothesis 1c: The spirit of innovation has a positive correlation with entrepreneurial intention.

2.2 Entrepreneurship education and entrepreneurial self-efficacy

Gorman et al. proposed that entrepreneurship education is the driving force for the promotion of industry and economic development. It is the main channel for cultivating the spirit of innovation and is an important way to enhance entrepreneurial abilities (Nabi and Holden, 2008). Entrepreneurship education encourages and guides college students to start businesses and helps more college students achieve their entrepreneurship dream. Developing entrepreneurial cognition, entrepreneurial ability, and innovative spirit are the main purposes of entrepreneurship education. Through entrepreneurship education, college students cultivate entrepreneurial cognition, entrepreneurial ability, innovative thinking, and innovative personality, as well as laying a solid foundation by building a complete innovation and entrepreneurship knowledge system. Self-efficacy was proposed, from a cognitive perspective, by American social psychologist Bandura in the 1970s. Self-efficacy is the degree of self-confidence that an individual needs to have in order to perform a task or perform an activity. It does not mean that an individual has mastery or practical skill (Bandura, 1978). Entrepreneurship education should not only train students to master entrepreneurial ability but can also effectively improve students' entrepreneurial confidence. Boyd et al. apply self-efficacy in the entrepreneurial field and propose the concept of entrepreneurial self-efficacy (Tsai et al., 2016). It emphasises that entrepreneurs can successfully play and complete their needs. The role assumed, the belief in completing the task, and entrepreneurship education to enhance students' entrepreneurial cognition, entrepreneurial ability, and innovative spirit, strengthen students' belief in entrepreneurship, enhance students' sense of self-efficacy, and enhance entrepreneurial success. Based on this, this paper proposes the following assumptions:

Hypothesis 2: Entrepreneurship education has a positive correlation with entrepreneurial self-efficacy.

In addition, the following hypotheses are proposed based on the three dimensions of entrepreneurship, as well as entrepreneurship and innovation in entrepreneurship education:

Hypothesis 2a. Entrepreneurial cognition has a positive correlation with entrepreneurial self-efficacy.

Hypothesis 2b: There is a positive correlation between entrepreneurial ability and entrepreneurial self-efficacy.

Hypothesis 2c: The spirit of innovation has a positive correlation with entrepreneurial self-efficacy.

2.3 Entrepreneurship education and entrepreneurship risk perception

Entrepreneurship education is the ability to train students to turn ideas into action, including creativity, innovation, risk-taking, and the ability to complete project goals (Nabi and Holden, 2008). Adventure spirit is part of entrepreneurship education; entrepreneurs face uncertainty and risk. College students are full of passion and more easily choose venture projects with higher risks, and students must have the ability to perceive entrepreneurial risks. Risk perception is a research field of psychology. It is the individual's perception and evaluation of risk, and reflects the individual's intuitive

judgement and subjective feelings (Su et al., 2015). Entrepreneurship education aims to teach and cultivate students' entrepreneurial cognition, entrepreneurial ability, and innovative spirit. In the process of entrepreneurship education, students' entrepreneurial cognition and entrepreneurial passion are stimulated, and students' ability to perceive entrepreneurial risk is also improved. When entrepreneurship education teaches students to face challenges and risks, they must actively formulate risk prevention measures and adopt effective countermeasures. The spirit of innovation encourages college students to be creative, dare to innovate, and increase their entrepreneurial risk perception ability (Cardon et al., 2013). Based on this, this paper proposes the following hypothesis:

Hypothesis 3: There is a positive correlation between entrepreneurship education and entrepreneurial risk perception.

In addition, the following hypotheses are proposed based on the three dimensions of entrepreneurship, as well as entrepreneurship and innovation in entrepreneurship education:

Hypothesis 3a: Entrepreneurial cognition has a positive correlation with entrepreneurial risk perception.

Hypothesis 3b: Entrepreneurial competence has a positive correlation with entrepreneurial risk perception.

Hypothesis 3c: The spirit of innovation has a positive correlation with entrepreneurial risk perception.

2.4 Entrepreneurial self-efficacy and entrepreneurial intention

There is a significant correlation between entrepreneurial self-efficacy and entrepreneurial success. It is an antecedent variable of entrepreneurial intention and is conducive to predicting entrepreneurial success (Khedhaouria et al., 2015). Zhao et al. (2005) used the structural equation model to analyse whether entrepreneurial self-efficacy had a positive influence on entrepreneurial intention, and Sequoia et al. also empirically analysed the conclusion that entrepreneurial self-efficacy has a positive impact on entrepreneurial intention (Chou et al., 2011). The more self-perceived the entrepreneurial individual feels about the skills necessary for starting a business, the easier it is to implement the entrepreneurial intention. Based on this, this paper proposes the following hypothesis:

Hypothesis 4: There is a positive correlation between entrepreneurial self-efficacy and entrepreneurial intention.

2.5 Venture risk perception and entrepreneurial intention

Entrepreneurial research focuses on risk perception for a long time and believes that perception and other cognitive factors play a key role in the process of entrepreneurship. The neglect of entrepreneurial risk perception is not conducive to the explanatory power of cognitive factors. Entrepreneurial risk perception is a psychological cognitive process. It is a subjective evaluation of entrepreneurial practice (Harris and Hahn, 2011). Even if entrepreneurs perceive high risks, they will choose venture projects with higher risks. This shows that entrepreneurs are not only exposed to risks, they will also be swayed by

the tendency of risk and the intention to start a business. Especially in the early stage of startup, the intention of entrepreneurship will prompt entrepreneurs to perceive and seek greater risks. In the study of risk perception and pursuing, it was found that college students majoring in management have the highest risk seeking levels and the lowest levels were found in professional managers (Akerlof and Kranton, 2005). This shows that the entrepreneurial intention and entrepreneurial risk perception of college students promote each other. Based on this, this paper proposes the following hypothesis:

Hypothesis 5: There is a positive correlation between entrepreneurial risk perception and entrepreneurial intention.

2.6 The mediating role of entrepreneurial self-efficacy

Entrepreneurial self-efficacy determines entrepreneurial intention, which is a decisive factor in testing whether a potential entrepreneur is entrepreneurial. The mediating role of entrepreneurial self-efficacy is reflected at the organisational and individual levels: entrepreneurial ability and performance, entrepreneurial risk control and the growth of start-up companies, personal traits, and entrepreneurial attitudes have all been studied (Krueger et al., 2000). Entrepreneurs need enough courage to face challenges and risks, and entrepreneurship education can just help entrepreneurs avoid risks and enhance entrepreneurial confidence. The impact of education and emotion on entrepreneurship has been recognised by the academic community. Entrepreneurship education can effectively enhance entrepreneurial ability, stimulate entrepreneurial passion, and promote entrepreneurial action. Through a literature review, it was found that entrepreneurship education can directly affect entrepreneurial intention, entrepreneurial intention through entrepreneurial self-efficacy, entrepreneurship education, entrepreneurial skills, entrepreneurial self-efficacy, entrepreneurial intention, and entrepreneurial behaviour (Moriano et al., 2014). Based on this, this paper proposes the following hypothesis:

Hypothesis 6: Entrepreneurial self-efficacy plays an intermediary role between entrepreneurship education and entrepreneurial intention.

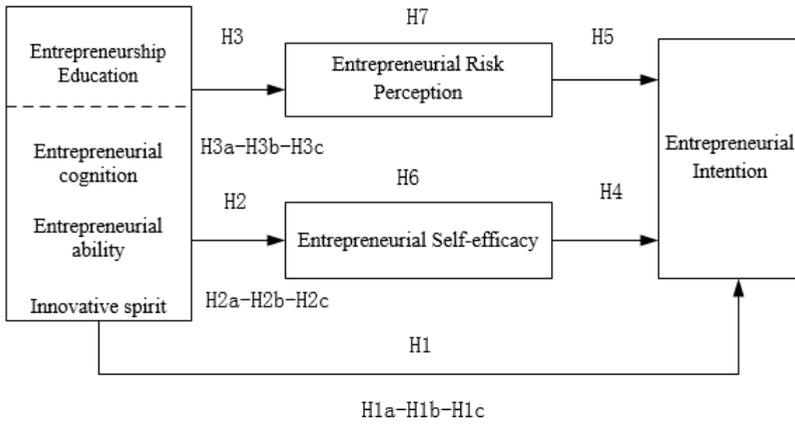
2.7 The mediating role of entrepreneurial risk perception

Risk is a factor that entrepreneurs must face and think about. The ability of entrepreneurs to perceive risk is obviously used for entrepreneurial intention (Kahneman and Lovallo, 1993). Entrepreneurship education is the main influencing factor of entrepreneurial ability and motivation. Entrepreneurship education aims to solve the uncertainty in the entrepreneurial process. The key to risk is to promote entrepreneurial motivation, enhance entrepreneurial skills, and avoid the risk of entrepreneurship. The ability of entrepreneurs to perceive risk is the driving force behind the transformation of entrepreneurship education into entrepreneurship. Based on this, this paper proposes the following hypothesis:

Hypothesis 7: Entrepreneurial risk perception plays an intermediary role between entrepreneurship education and entrepreneurial intention.

In summary, the theoretical framework of this paper is constructed, as shown in Figure 1.

Figure 1 Theoretical framework



3 Methods

3.1 Selection criteria and the collection of studies

This paper uses a questionnaire survey method to collect data. The research objects are college students from Beijing, Tianjin, Jiangsu, Zhejiang, Shanghai, and Guangdong provinces with more active entrepreneurship. Based on systematic literature data review, domestic and foreign scholars are studying mature quantities. The questionnaire was designed according to the data design and structured interview syllabus for some of the undergraduates who accepted entrepreneurship education. Based on the interviews, the questionnaire was revised again. The questionnaires all consisted of multiple-choice questions, using Likert’s five-level scale (1 = strongly disagree, 5 = strongly agree). In order to ensure the confidentiality and authenticity of the questionnaire, anonymity is necessary. It is issued in three forms. First, the questionnaire is distributed and collected on the spot; second, the questionnaire is mailed; and third, it is distributed as an electronic questionnaire. Based on the initial data obtained, the items and factors of the questionnaire were analysed, and the questions with poor discrimination, scattered load of factors, and insignificant significance were deleted. The final questionnaire data was used for statistical analysis. A total of 717 questionnaires were issued, 643 were recalled, 81 were unqualified, and 562 were final. The effective recovery rate was 78.38%, which was in line with the internationally valid questionnaire rate. From Table 1, we can see that the range of sample objects in this study covers different genders, professions, team sizes, industries, etc., with a more balanced distribution and better representation.

3.2 Variable coding

The Entrepreneurship Education Scale adopts a focused tool based on the Theory of Planned Behaviour, measured from the three dimensions of entrepreneurial cognition, entrepreneurial ability, and innovative spirit. It combines the actual design of 24 items in Chinese universities, such as “degree of interest in entrepreneurship” and “degree of preparation for entrepreneurship”, etc. (Shapero, 1980). The Cronbach’s α values were 0.871, 0.814, and 0.831 for the three respective dimensions. The entrepreneurship risk

perception scale mainly refers to Mcgee et al.'s research and assesses it from several aspects, such as perceived risk and risk propensity. This includes seven items, such as "degree of entrepreneurial failure to combat confidence" (Zhang and Cain, 2017). The scale's Cronbach's α value is 0.910. The Bandura School's viewpoint is the theoretical premise of the measurement of entrepreneurial self-efficacy variables. It measures entrepreneurial self-efficacy from five dimensions and 22 items (Cardon et al., 2013). Forbes, based on a scale developed by Chen et al., reduces the measurement dimensions to four and reduces the number of items to 15. The items are measured (Forbes, 2005). This paper uses the entrepreneurial self-efficacy scale of De Noble et al. because it is more representative in the academic community and consists of six dimensions to measure entrepreneurial self-efficacy: innovation, opportunity identification, interpersonal relationship management, resource acquisition and configuration, risk uncertainty management, creation, and the maintenance of innovation support the environment (Hmieleski and Corbett, 2008). The scale's Cronbach's α is 0.812. The entrepreneurial intention scale is mainly based on the research of Gelderen et al. It measures entrepreneurial intention in terms of interest, behavioural expectations, entrepreneurial feasibility, and other aspects, including six items, such as "degree of future entrepreneurial possibilities" and "degree of entrepreneurial intention", etc. (van Gelderen et al., 2008). The Cronbach's α value of this scale is 0.842.

Table 1 Samples included in the meta-analysis ($N = 562$)

<i>Category</i>	<i>Sub-category</i>	<i>Frequency</i>
Gender	Male	62.46%
	Female	37.54%
Age	<20	15.12%
	21–25	32.56%
	26–30	34.88%
	31–35	17.44%
Education level	College	16.55%
	Undergraduate	39.50%
	Masters	32.74%
	PhD	11.21%
Profession	Managed	36.48%
	Literature, history, and philosophy	12.28%
	Science and engineering	33.27%
	Agricultural medical law	9.43%
	Others	8.54%

3.3 Reliability and validity test

In order to avoid deviations caused by ambiguous interpretations and unclear expressions of scale language, all foreign language scales were used for translation. Senior professionals in the field of innovation and entrepreneurship were invited to review and revise this, and language differences were maximally avoided. Using Cronbach's α as a criterion for the reliability of the scale, this study used SPSS 19.0 statistical analysis software. The results are shown in Table 2. The Cronbach's α values of all variables were all greater than 0.8, and the Cronbach's α values were not significantly increased after removing any item test. In terms of construct validity, the Kaiser Meyer Olkin (KMO) values are all greater than 0.7, which shows that the overall reliability of the scale and the internal consistency is better.

Table 2 Factor analysis ($N = 562$)

<i>Variable</i>	<i>Factor loading</i>	<i>Cronbach's α</i>	<i>KMO</i>	<i>Total variance explained</i>
EC	0.659	0.871	0.727	51.383%
EA	0.764	0.814	0.716	62.569%
IS	0.779	0.831	0.723	52.397%
ERP	0.673	0.910	0.813	56.856%
ESE	0.742	0.812	0.721	63.342%
EI	0.789	0.842	0.742	70.007%

EA, entrepreneurial ability; EC, entrepreneurial cognition; EI, entrepreneurial intention; ERP, entrepreneurial risk perception; ESE, entrepreneurial self-efficacy; IS, innovative spirit; KMO, Kaiser Meyer Olkin.

According to Table 3, except for a few correlation coefficient values (e.g., entrepreneurship risk perception) that are slightly higher than the square root of their average variance extracted (AVE), other indicators and values are in line with the requirements, indicating that the discriminant validity of the data and the content validity and structural validity of the questionnaire are good.

The goodness of fit of this model is shown in Table 4, which is 4.34, between 2 and 5. It has the root mean square error of approximation (RMSEA) of 0.076, which less than 0.1. This means that the fit is better. The fitting index the non-normed fit index (NNFI) = 0.918; comparative fit index (CFI) = 0.968, is higher than 0.9, to meet the standard values. In summary, the fitting of the research data and the structural equation model is very good.

3.4 Common method deviation test

Although the questionnaires were solicited and revised by the parties concerned before the formal issuance of the questionnaires, there was a common method bias in the questionnaires due to the influence of the identity of the data sources and the measurement environment. Harman's single factor test was used to test the questionnaire. The exploratory factor analysis was performed on the questionnaire questions. The unroasted analysis results showed that the questions were automatically aggregated into

five factors, with eigenvalues greater than 1. The cumulative variance contribution rate was 64.131%, the first eigenvalue was 6.969, and the variance contribution rate was 30.425%, which is less than 50% of the total explanatory variable. The co-linearity check VIF value was <2 , and the tolerance between variables was >0.6 . Common method bias and collinearity have little effect on this paper.

Table 3 Descriptive statistical variables ($N = 562$)

Variable	Standard										
	Mean	deviation	1	2	3	4	5	6	7	8	9
Gender	1.39	0.52									
Age	1.81	0.56	0.062								
Education level	3.31	0.58	0.033	0.451							
EC	3.37	0.51	-0.197**	0.213*	0.195*	0.856					
EA	4.16	0.57	-0.211**	0.158*	0.323	0.512**	0.631				
IS	3.69	0.54	-0.032	0.073	0.341*	0.613**	0.553**	0.656			
ERP	3.58	0.62	0.115	0.071	0.021	0.452**	0.691**	0.729*	0.718		
ESE	3.83	0.53	-0.183**	0.174*	0.069	0.539**	0.757**	0.653*	0.702*	0.774	
EI	3.15	0.71	-0.071	0.139*	0.241*	0.471**	0.462**	0.391*	0.423*	0.458*	0.822

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. Diagonal data is the square root of AVE. EA, entrepreneurial ability; EC, entrepreneurial cognition; EI, entrepreneurial intention; ERP, entrepreneurial risk perception; ESE, entrepreneurial self-efficacy; IS, innovative spirit; AVE, average variance extracted.

Table 4 Model fit results ($N = 562$)

Fitting indicator	χ^2/df	RMSEA	NNFI	CFI
Fitting results	4.34	0.076	0.918	0.968
Recommended value	2-5	<0.1	>0.9	>0.9

CFI, Comparative fit index; NNFI, non-normed fit index; RMSEA, root mean square error of approximation.

4 Results

4.1 Descriptive statistics

Table 3 shows the descriptive statistics of major variables: entrepreneurial cognition ($\beta = 0.471$, $P < 0.01$), entrepreneurial ability ($\beta = 0.462$, $P < 0.01$), innovation spirit ($\beta = 0.391$, $P < 0.05$), entrepreneurial risk perception ($\beta = 0.457$, $P < 0.05$), and entrepreneurial self-efficacy ($\beta = 0.457$, $P < 0.05$). The latter was positively correlated with entrepreneurial intention; gender was significantly negatively correlated with entrepreneurial consciousness ($\beta = -0.197$, $P < 0.01$), while age ($\beta = 0.213$, $P < 0.05$) and education level ($\beta = 0.195$, $P < 0.05$) are positively correlated with entrepreneurial consciousness. This shows that, with the increase of age and the improvement of education level, entrepreneurial cognition increases ($\beta = 0.341$, $P < 0.05$) and is positively correlated with education level, indicating that knowledge can promote

innovation to some extent. In order to clarify the degree of correlation between the variables, a further regression analysis is needed.

4.2 Hypothetical test

This study used SPSS 19.0 and Amos 17.0 software for data management and analysis. Hierarchical regression was used to test for mediation effects (Zhao et al., 2010), independent variables (X), dependent variables (Y), and intermediate variables (Z). First, X undergoes a regression with Y , resulting in the regression coefficient, a . If a is significant, the test is continued. If a is not significant, there is no mediating effect, and the test is stopped. Second, the regression coefficient X is returned by X and Z to obtain a regression coefficient, b . If b is significant, the test is continued. If b is not significant, the test is stopped. Third, X and Z are used as new variables, and Y is used for regression analysis to obtain the regression coefficient a' . If a' is not significant, there is a complete mediating effect. If a' is significant, some mediating effects exist. The Z and Y regression coefficient is d . If d is significant, there is an intermediate effect. If a' and d are not significant, the mediating effect does not exist. This paper analyses the relationship between entrepreneurial education and entrepreneurial intention and gradually tests the mediating effects of entrepreneurial self-efficacy and entrepreneurial risk perception.

This study constructed 16 regression models for hypothesis testing, adding control variables gender, age, and education level to the regression analysis. Table 5 includes the model regression results, which show that entrepreneurship education effectively explains 14.1% of the entrepreneurial intention variation, and both are positive. Significantly related ($\beta = 0.226$, $P < 0.01$) are entrepreneurial cognition ($\beta = 0.286$, $P < 0.01$), entrepreneurial ability ($\beta = 0.236$, $P < 0.01$), and creative spirit ($\beta = 0.219$, $P < 0.01$). There is a significant positive effect, assuming H1 and sub-hypotheses H1a, H1b, and H1c hold.

Table 5 Regression analysis results (dependent variable: intention to start a business)

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
EE	0.226**			
EC		0.286**		
EA			0.236**	
IS				0.219**
ERP				
ESE				
Gender	0.121**	0.137**	0.084	-0.224**
Age	-0.031	-0.022	0.118*	-0.087
Education level	0.227*	0.286*	0.236*	0.372**
R^2	0.145	0.129	0.117	0.271
Adj. R^2	0.141	0.119	0.113	0.289
F	26.279	20.421	17.364	22.382

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. EA, entrepreneurial ability; EC, entrepreneurial cognition; EE, entrepreneurship education; ERP, entrepreneurial risk perception; ESE, entrepreneurial self-efficacy; IS, innovative spirit.

Table 6 examines the impact of entrepreneurship education and dimensions on entrepreneurial self-efficacy. The results show that entrepreneurship education effectively explains 27.1% of entrepreneurial self-efficacy variation. Entrepreneurship education ($\beta = 0.531$, $P < 0.01$), entrepreneurial cognition ($\beta = 0.549$, $P < 0.01$), entrepreneurial ability ($\beta = 0.426$, $P < 0.01$), and innovative spirit ($\beta = 0.508$, $P < 0.01$) were significantly positively correlated with entrepreneurial self-efficacy, assuming H2 and sub-hypotheses H2a, H2b, and H2c were established.

Table 6 Regression analysis results (dependent variable: entrepreneurial self-efficacy)

	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>	<i>Model 8</i>
EE	0.531**			
EC		0.549**		
EA			0.426**	
IS				0.508**
ERP				
ESE				
Gender	-0.031	0.071	-0.084	0.053
Age	-0.033	-0.039	0.029	-0.028
Education level	-0.014	0.220	-0.057	0.193
R^2	0.270	0.281	0.127	0.253
Adj. R^2	0.271	0.284	0.129	0.203
F	43.519	49.125	17.384	39.077

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. EA, entrepreneurial ability; EC, entrepreneurial cognition; EE, entrepreneurship education; ERP, entrepreneurial risk perception; ESE, entrepreneurial self-efficacy; IS, innovative spirit.

Table 7 examines the impact of entrepreneurship education and dimensions on entrepreneurial risk perception. The results show that entrepreneurship education effectively explained 25.3% of entrepreneurial risk perception variability. Entrepreneurship education ($\beta = 0.493$, $P < 0.01$), entrepreneurship awareness ($\beta = 0.416$, $P < 0.01$), entrepreneurial ability ($\beta = 0.503$, $P < 0.01$), and innovative spirit ($\beta = 0.302$, $P < 0.01$) were significantly positively correlated with entrepreneurial risk perception, assuming H3 and sub-hypotheses H3a, H3b, and H3c were established.

Table 8 examines the impact of entrepreneurial self-efficacy and entrepreneurial risk perception on entrepreneurial intention. The data shows that entrepreneurial self-efficacy ($\beta = 0.501$, $P < 0.01$), entrepreneurial risk perception ($\beta = 0.429$, $P < 0.01$), and the entrepreneurial intention are significantly positively correlated, assuming H4 and H5 are established.

Table 9 shows the mediating effects of entrepreneurial self-efficacy and entrepreneurial risk perception. Entrepreneurial education and entrepreneurial self-efficacy were used as variables, and entrepreneurial intention was added at the same time to the regression analysis. The data showed that the positive effect of entrepreneurship education was still significant, but the regression coefficient was reduced from 0.226 to 0.087. The effect was weakened, indicating that there is a partial mediation by entrepreneurial intentions in the relationship between entrepreneurial self-efficacy and

entrepreneurship education, assuming H6 is established. The regression analysis with entrepreneurship education and entrepreneurship risk perception as independent variables and entrepreneurial intentions showed that the positive effect of entrepreneurship education was still significant, but the regression coefficient was reduced from 0.226 to 0.139. The effect was weakened, indicating that entrepreneurship risk perception was significant entrepreneurship education and entrepreneurship. There is a partial intermediary between these, assuming H7 is established.

Table 7 Regression analysis results (dependent variable: perception of entrepreneurial risk)

	<i>Model 9</i>	<i>Model 10</i>	<i>Model 11</i>	<i>Model 12</i>
EE	0.493**			
EC		0.416**		
EA			0.503**	
IS				0.302**
ERP				
ESE				
Gender	-0.119**	-0.090	-0.184**	-0.211**
Age	0.031	0.042	0.118*	-0.099
Education level	0.013	0.042	-0.036	0.351**
R^2	0.251	0.249	0.123	0.263
Adj. R^2	0.253	0.252	0.119	0.297
F	35.125	35.109	17.364	42.361

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. EA, entrepreneurial ability; EC, entrepreneurial cognition; EE, entrepreneurship education; ERP, entrepreneurial risk perception; ESE, entrepreneurial self-efficacy; IS, innovative spirit.

Table 8 Regression analysis results (dependent variable: entrepreneurial intention)

	<i>Model 13</i>	<i>Model 14</i>
EE		
EC		
EA		
IS		
ERP	0.501**	
ESE		0.429**
Gender	0.121**	0.156*
Age	0.013	-0.027
Education level	0.079	0.293**
R^2	0.262	0.218
Adj. R^2	0.255	0.209
F	40.368	34.724

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. EA, entrepreneurial ability; EC, entrepreneurial cognition; EE, entrepreneurship education; ERP, entrepreneurial risk perception; ESE, entrepreneurial self-efficacy; IS, innovative spirit.

Table 9 Mediation analysis (dependent variable: intention to start a business)

	<i>Model 15</i>	<i>Model 16</i>
EE	0.063	0.139**
EC		
EA		
IS		
ERP	0.418**	
ESE		0.397**
Gender	0.123*	0.156*
Age	-0.019	-0.041
Education level	0.239*	0.229*
R^2	0.268	0.246
Adj. R^2	0.259	0.240
F	35.236	28.258

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. EA, entrepreneurial ability; EC, entrepreneurial cognition; EE, entrepreneurship education; ERP, entrepreneurial risk perception; ESE, entrepreneurial self-efficacy; IS, innovative spirit.

5 Conclusions

This paper constructs a model of the entrepreneurial intention mechanism and conducts a questionnaire survey on entrepreneurial college students. It examines the impact of entrepreneurship education on college students' entrepreneurial intention. Empirical analysis leads to the following conclusions. First, the dimensions of entrepreneurship education have a significant positive impact on entrepreneurial intention. According to the regression results, entrepreneurship education has a significant positive promotion effect on entrepreneurial intention. The positive effect of entrepreneurial cognition on entrepreneurial intention is more significant than that of entrepreneurial ability and innovation. This shows that entrepreneurial cognition is the key to inspiring entrepreneurial activities, and entrepreneurship education stimulates entrepreneurial cognition and promotes entrepreneurial action. Second, each dimension of entrepreneurship education has a significant positive impact on entrepreneurial risk perception and entrepreneurial self-efficacy. Entrepreneurship education teaches students how to deal with and avoid risks and improve their risk perception ability. In addition, under the guidance of risk-awareness, entrepreneurship education guides entrepreneurs in setting challenging goals, stimulating the inner potential of college students, creatively solving innovation and entrepreneurship issues, and enhancing entrepreneurial self-efficacy. Third, entrepreneurial risk perception and entrepreneurial self-efficacy have a significant positive effect on entrepreneurial intention. Entrepreneurial risk perception is the explanatory variable of entrepreneurial intention. Through entrepreneurship education, the ability of university students to perceive risk is improved, and college students are encouraged to innovate and take risks, as well as seize and create more entrepreneurial opportunities. Entrepreneurial self-energy efficiency can effectively predict entrepreneurial intention, promote the ability of college students to form a

business plan through entrepreneurship education, help them reasonably assess their own resources, enhance their entrepreneurial beliefs, and increase their entrepreneurial intention. Fourth, entrepreneurial risk perception and entrepreneurial self-efficacy have a partial mediating effect between entrepreneurial education and entrepreneurial intention. This can be used to interpret the specific path of entrepreneurship education's effect to entrepreneurial intention. Entrepreneurship education can enhance the entrepreneurial enthusiasm, ability, and intention of college students. A keen sense of risk can promote the college students to actively seek opportunities, predict and identify reasonable and effective risks, prevent risks, increase the probability of entrepreneurial success, and stimulate students' intention to start businesses. Entrepreneurship education can also optimise university students' way of thinking, cultivate their ability to innovate, promote students' sense of self-efficacy, and increase entrepreneurial confidence and entrepreneurial intention.

6 Limitations

This study has a certain theoretical significance for clarifying the relationship between entrepreneurship education and entrepreneurial intention. At present, the research on the dependent variables before the entrepreneurial intention is still at an exploratory stage. This paper starts from the cognitive theory and the theory of planned behaviour and explores entrepreneurial risk perception and entrepreneurship, as well as the mechanism of self-efficacy and entrepreneurial intention. Previous studies have mainly focused on the impact of education dynamics and socio-economic needs on entrepreneurial education and entrepreneurial intention. There has been less research on the relationship between psychology, planning, behaviour, efficacy, and perception. Therefore, this paper takes entrepreneurship education as a pre-existing variable and, for the first time, starts from the theory of cognitive and planned behaviour to study the intermediary role of entrepreneurial risk perception and entrepreneurial self-efficacy, in order to increase entrepreneurial intention and broaden its scope. Secondly, this paper further enriches the research on the dependent variables before entrepreneurial intention and enriches the impact of entrepreneurial education on entrepreneurial intention.

This paper further enriches the research on the dependent variables before entrepreneurial intention and enriches the impact of entrepreneurial education on entrepreneurial intention. At present, domestic and foreign entrepreneurs mainly use entrepreneurial attitudes, motivations, and subjective norms as antecedent variables to study their entrepreneurial intention, cognition, psychology, and emotions. It is concluded that entrepreneurship education is a pre-emptive variable that directly affects the entrepreneurial intention. Finally, this paper uses university students from six provinces with high entrepreneurial activity as the sample, has certain forward-looking and representativeness, and supplements the research sample of entrepreneurial intention. College students are the main body of entrepreneurship education. From the perspective of entrepreneurship education, they construct the theoretical framework of college students' entrepreneurial intention, introduce intermediary variables to conduct empirical research, and expand the research field of entrepreneurial intention to provide research evidence.

This research has a very important theoretical and practical significance for entrepreneurship education as a pre-test variable to study entrepreneurial intention, but there is still room for improvement. Firstly, this paper analyses the mediating effects of entrepreneurial risk perception and entrepreneurial self-efficacy. There may be a richer relationship structure for entrepreneurial intention and exploring the mediating effects of other regulatory variables is the direction of future research. Secondly, the research dimension of entrepreneurship education can be subdivided, and a certain variable in the entrepreneurship education dimension can also be selected to dig deeper into the influence of entrepreneurial intention, optimise the program of entrepreneurial education's influence on entrepreneurial intention, and increase its reference value.

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