

# ***The Impact of the Depth and Breadth of Participation in the College Student Entrepreneurship Competition on the Willingness to Start a Business***

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**Abstract:** China's economy continues to develop, and Chinese people's enthusiasm for entrepreneurship is also rising with the encouragement of the country. College students are an important part of the reserve group for entrepreneurship, and it is essential to study the factors affecting their willingness to start a business. During college, participating in entrepreneurship competitions is an important activity that affects college students' willingness to start a business. This article studies the influence of the depth and breadth of college students' participation in the entrepreneurship competition on their willingness to start a business. In the process of research, this article also considers the influencing factors of cognitive flexibility and finally gets the following conclusions: The depth of college students' participation in the entrepreneurship competition and their willingness to start a business are inverted U-shaped relationships; the breadth of participation in the college student entrepreneurship competition is positively affecting the willingness of participants to start a business; cognitive flexibility positively regulates the impact of the depth and breadth of participation on the willingness to start a business.

**Keywords:** depth of participation, breadth of participation, cognitive flexibility, willingness to start a business

## **1. Introduction**

Under the guidance of the national strategy of innovation-driven development, entrepreneurship has become the main driving force for promoting innovation and development, and the state attaches special importance to promoting the entrepreneurship of college students. To this end, colleges and universities actively hold various entrepreneurial innovation competitions to enhance the willingness of college students to start a business. However, different college students show different ways of participating in activities. For example, some students use one entrepreneurial idea to participate in multiple entrepreneurial competitions (depth of participation), while other groups design different entrepreneurial ideas in different entrepreneurial competitions (breadth of participation). This paper compares the different effects of these two different ways of participation on the differentiated willingness to start a business. Based on domestic and foreign theoretical exploration, this paper establishes a model framework, uses questionnaire research methods to collect data, and explores the relationship between the depth of participation in entrepreneurship

competitions, the breadth of participation in entrepreneurship competitions, cognitive flexibility, and college students' entrepreneurial willingness. In addition, it also tests the proposed theoretical models through empirical data. This paper enriches the existing theories and has certain theoretical and practical significance.

## 2. Theoretical Models and Research Hypotheses

### 2.1. Research Ideas and Theoretical Models

The concept of entrepreneurial willingness was first put forward by Bird of the United States [1]. He believed that the willingness to start a business is a psychological desire, and when the conditions for starting a business reach a certain level, it will be transformed into actual entrepreneurial behavior [2]. Previous studies have indicated that the individual's willingness to start a business is greatly affected by personal factors such as personal education and personal experience, but family background factors such as family economy, culture, social capital, parents' entrepreneurial experience, and values also significantly affect the individual's willingness to start a business. Besides, external factors will also affect the individual's attitude, subjective rules, and cognitive behavior [3], which jointly affect the entrepreneurial behavior of individuals, so there are many factors that affect the willingness to start a business [4]. Through the comparison of college students' entrepreneurial willingness and the factors affecting entrepreneurship, it is found that college students' entrepreneurial willingness mainly includes six aspects, including participating in entrepreneurship competitions, participating in entrepreneurship activities, family entrepreneurship, school entrepreneurship education, family support, and majors. Research shows that participating in the relevant activities of enterprises will have a certain impact on the willingness to start a business [5]. Starting from the depth and breadth of participation in the entrepreneurship competition, this paper studies and analyzes college students' willingness to start a business with a consideration of the role of cognitive flexibility. The model applied in this paper is shown in Figure 1.

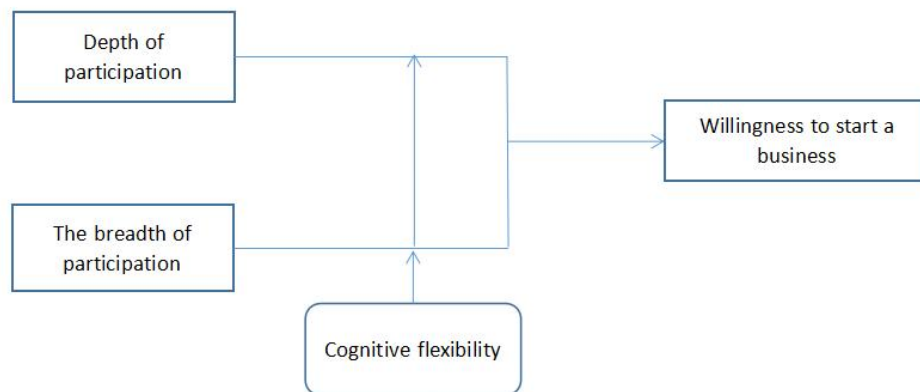


Figure 1: The theoretical model applied in the paper.

### 2.2. Research Hypotheses

#### 2.2.1. The Depth of Participation and Willingness to Start a Business

The number of times college students participate in entrepreneurship competitions and the number of ideas used by college students to participate in entrepreneurship competitions together affect their willingness to start a business [6]. According to the theory of planning behavior, entrepreneurship is a typical planning behavior. With the desire to start a business, it means that

entrepreneurs intend to start a new career, and the characteristics of entrepreneurial behavior determine their impact on entrepreneurial attitudes. In entrepreneurship education, the subjective norms of individuals will be actively strengthened to control the perceptual behavior of enterprises. The system will also improve with the growth of entrepreneurial knowledge, but the impact of entrepreneurial education on entrepreneurial willingness remains to be explored. That is to say, with an increasing number and times of people participating in entrepreneurship competitions, there is an increasing need for entrepreneurship education, and the more entrepreneurship education, the stronger the entrepreneurial spirit will be. As a result, the number of college students and the times of participation in entrepreneurship competitions will have a positive impact on the entrepreneurial spirit. Therefore, the ratio of the number of participants and the times they participate in entrepreneurship competitions is determined to represent the connotation of the depth of participation. According to the above assumptions, Hypothesis 1 (H1) is put forward:

H1: There is an inverted U-shaped relationship between the depth of participation in the college student entrepreneurship competition and the willingness to start a business.

### **2.2.2. The Breadth of Participation and Willingness to Start a Business**

The number of college students participating in the entrepreneurship competition and the number of ideas used to participate in the entrepreneurship competition will have a certain impact on the entrepreneurial willingness of college students [7]. The more times college students participate in entrepreneurship competitions, the more potential awards, and the more creative ideas college students use in entrepreneurship competitions, the more types of potential awards. Whether it is the entrepreneurial education learned by participants during the competition or the potential awards after the competition, they are all strengthening the participants' entrepreneurial willingness. The number of college students participating in the entrepreneurship competition and the number of ideas used by college students when participating in the entrepreneurship competition are strengthening their willingness to start a business. Therefore, this paper defines the breadth of the college student entrepreneurship competition as the product of the number of college students participating in the entrepreneurship competition and the number of creative ideas applied in the entrepreneurship competition. According to the above assumptions, Hypothesis 2 (H2) is put forward:

H2: The breadth of participation in the college student entrepreneurship competition is positively affecting the willingness of participants to start a business.

### **2.2.3. Cognitive Flexibility and the Depth of Participation**

Entrepreneurial self-efficacy refers to the self-evaluation of whether individuals can successfully engage in entrepreneurial activities after synthesizing their own abilities [8]. Individual entrepreneurial self-efficacy is not immutable. Some studies have further confirmed that entrepreneurship theory education has a significant positive effect on college students' entrepreneurial self-efficacy; entrepreneurial practice teaching has an impact on college students' entrepreneurial self-efficacy. Therefore, people's personality traits have a positive impact on college students' willingness to start a business. Different participants receive different effects after participating in the entrepreneurship competition. In order to explore more deeply the impact of participating in the entrepreneurship competition on the willingness to start a business, this study sets 10 questions in the questionnaire with corresponding scores. The average score is taken according to the total scores to judge cognitive flexibility, and then data analysis is conducted to explore the impact of cognitive flexibility on the willingness to start a business. What is more, the flexibility of entrepreneurship affects the willingness to start a business by affecting the depth of

college students' participation in entrepreneurship competitions. To sum up, Hypothesis 3 (H3) is put forward:

H3: Cognitive flexibility positively regulates the impact of the depth of participation on the willingness to start a business.

#### 2.2.4. Cognitive Flexibility and the Breadth of Participation

Cognitive flexibility can make a person's thinking sharper and more creative, and enable the person to use appropriate entrepreneurial ideas and actions to deal with new business activities [9]. Individuals with high cognitive elasticity are more likely to adopt active control strategies and organize entrepreneurship in a way of guidance and motivation with higher self-efficacy and sensitivity to opportunities. They also actively explore new ways of entrepreneurship and thinking and finally become an entrepreneur through positive thinking, analysis, judgment, innovation, and practice. Therefore, people's personality traits have a positive impact on college students' willingness to start a business. Different participants receive different effects after participating in the entrepreneurship competition. In order to more deeply explore the impact of participating in the entrepreneurship competition on the willingness to start a business, this study sets up 10 questions in the questionnaire with corresponding scores. The average score is taken according to the total scores to judge cognitive flexibility, and then data analysis is conducted to explore the impact of cognitive flexibility on the willingness to start a business. Besides, the flexibility of entrepreneurship affects the willingness to start a business by affecting the breadth of college students' participation in the entrepreneurial competition. To sum up, Hypothesis 4 (H4) is put forward:

H4: Cognitive flexibility positively regulates the impact of the breadth of participation on the willingness to start a business.

### 3. Data Analysis

#### 3.1. Reliability and Validity Tests

This paper adopts the validity and reliability test of the questionnaire to ensure the correctness and credibility of the experimental data. In terms of credibility, this paper focuses on the alpha coefficient (internal compatibility factor) in the variable measurement problem [10]. Reliability, also known as reliability or accuracy in empirical research, is the stability and consistency of the data observed in the same way. The correlation between the test items in the scale is the basis for the confidence test. Among them, equivalence, stability, and internal consistency are the most common reliability indicators. This test is used to test the measure of each variable, that is, the inherent consistency of each measurement question.

Table 1: Scale Credit Analysis.

	Reliability test	
	Reliability statistics	
Trust of willingness to start a business	Cronbach's Alpha	Number of items
	0.891	5
	Reliability statistics	
	Reliability statistics	
Cognitive flexibility credibility	Cronbach's Alpha	Number of items
	0.945	10

With the alpha proposed by L.J. Cronbach, the alpha coefficient is 0~1, and it is less likely to occur 0 or 1. Generally speaking, the larger the alpha, the higher the credibility of the scale. Although there is no unified conclusion about the standard of alpha, from the perspective of social disciplines, if the value of alpha is greater than 0.7, it can be regarded as qualified. Table 1 shows the results of the confidence analysis of the sample data used in this paper.

As can be seen from Table 2, the Kaiser-Meyer-Olkin (KMO) value of each variable is >0.7, and the Bartlett's spherical test value is also significant, that is to say, each item of the above variables is suitable for factor analysis.

Table 2: Scale validity analysis.

Validity test			
Inspection of KMO and Bartlett			
Sample enough Kaiser-Meyer-Olkin metric.			0.954
Bartlett's degree of sphericity test		Similar to the card	1569.359
		df	45
		Sig.	0
Inspection of KMO and Bartlett			
Sample enough Kaiser-Meyer-Olkin metric.			0.939
Bartlett's degree of sphericity test		Similar to the card	2235.816
		df	105
		Sig.	0

As a multivariate statistical analysis method, the purpose of factor analysis is to explore the intrinsic structure of the observed data by studying the intrinsic relationship between multiple variables. Then, one or a few variables are used to represent this structure. Multivariate statistical analysis is a statistical method, which is a statistical method for evaluating specific indicators. Table 3 lists the analysis results of these five factors:

Table 3: Factor analysis of research variables.

Project		Rotation component matrix a	
		Component	
		1	2
Cognitive flexibility	Show yourself according to the actual situation.	0.835	
	Degree of self-confidence in doing things diversely	0.828	
	I often express my thoughts in different ways.	0.825	
	The courage to challenge the impossible difficulties in cognition	0.819	
	You can be responsible for your actions.	0.793	
	Willing to make an alternative plan for the established plan	0.787	
	The way you do things by yourself is not fixed.	0.784	
	The degree of influence of self-judgment when making decisions	0.78	
	Don't stick to the rules to complete the task.	0.778	
	Try to avoid strange situations.	0.667	
Willingness to start a business	3		0.829
	4		0.826
	2		0.812
	5		0.791
	1		0.771

Table 3: (continued).

Extraction method: main ingredients.  
Rotation method: orthogonal rotation method with Kaiser  
standardization.  
A rotation converges after 3 iterations.

Based on the factor analysis of the above factors, it is found that the factor load of each indicator is more than 0.5. This fully shows that the above indicators can explain the factors well and meet the needs of testing.

### 3.2. Related Analysis of Variables

Correlation analysis is analyzed by two or more correlated variable elements to measure the correlation between the two factors. In order to carry out relevant analysis, there must be some correlation between the relevant elements.

Table 4: Correlation coefficient table.

		Relevance			
		The breadth of participation	Depth of participation	Willingness to start a business	Cognitive flexibility
The breadth of participation	Pearson relevance	1	-0.063	0.111	0.101
	Significance (both sides)		0.411	0.111	0.147
	N	207	172	207	207
Depth of participation	Pearson relevance	-0.063	1	-.155*	-0.091
	Significance (both sides)	0.411		0.042	0.234
	N	172	172	172	172
Willingness to start a business	Pearson relevance	0.111	-.155*	1	.515**
	Significance (both sides)	0.111	0.042		0
	N	207	172	207	207
Cognitive flexibility	Pearson relevance	0.101	-0.091	.515**	1
	Significance (both sides)	0.147	0.234	0	
	N	207	172	207	207

\*There is a significant correlation at the 0.05 level (both sides).

Table 4: (continued).

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**\*\*There is a significant correlation at the 0.01 level (both sides).**

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From Table 4, it can be seen that the breadth of participation is positively related to the willingness to start a business, the depth of participation is negatively related to the willingness to start a business, and cognitive flexibility is positively related to the breadth of participation and negatively related to the depth of participation.

### 3.3. Linear Regression Analysis

Linear regression is a statistical analysis method that studies the correlation between variables and independent variables. Regression is the interaction between factors and independent variables, which can be used to find the causal relationship between variables and can also be used to predict.

Under certain conditions, when the sig value of the participation depth, participation breadth, and cognitive flexibility is less than 0.05, that is, when the variable is linearly related to the willingness to start a business, the breadth of participation and the willingness to start a business are positively correlated, the depth of participation and the willingness to start a business are positively correlated, the square of the depth of participation and the willingness to start a business are negatively correlated, and cognitive flexibility positively affect the impact of the depth and breadth of participation on the willingness to start a business.

## 4. Result Discussion

This part is to sort out and analyze the collected data and use SPSS to test the investigation assumptions. Through the examination of the model, all four hypotheses are valid.

### 4.1. The Impact of the Depth and Breadth of Participation on the Willingness to Start a Business

After regression analysis, this study found that the breadth and depth of participation are positively related to the willingness to start a business, and the square of the depth of participation is negatively related to the willingness to start a business. The number of college students participating in the entrepreneurship competition and the number of ideas used by college students when participating in the entrepreneurship competition are strengthening the willingness to start a business. Therefore, the breadth of participation positively affects the willingness to start a business. According to the actual situation, the number of participants in the entrepreneurial competition and the number of creative ideas are using the participants' personal resources, and the participant's personal resources are limited, so after exceeding a certain limit, the participant's energy and other resources are limited so that the depth of participation negatively affects the willingness to start a business. Therefore, H1 and H2 are verified (the inverted U-shaped diagram of the depth of participation and willingness to start a business is shown in Figure 2).

To sum up, if the participants of the entrepreneurship competition intend to improve their willingness to start a business, they need to participate in more entrepreneurship competitions and use more ideas to participate in the entrepreneurship competition. However, new ideas cannot always be used to participate in more competitions since personal resources are limited. Participants can use one or a few creative competitions to polish their works and improve their understanding



and cognition of creativity, so as to improve their entrepreneurial willingness more effectively. From the perspective of the organizer of the entrepreneurial competition, to better achieve the purpose of improving the entrepreneurial willingness of the participants in the competition, it is not suggested to require participants to come up with more ideas in order to make them participate in more competitions. Instead, participants should be encouraged to participate in a few creative competitions many times, so as to more effectively improve participants' willingness to start a business.

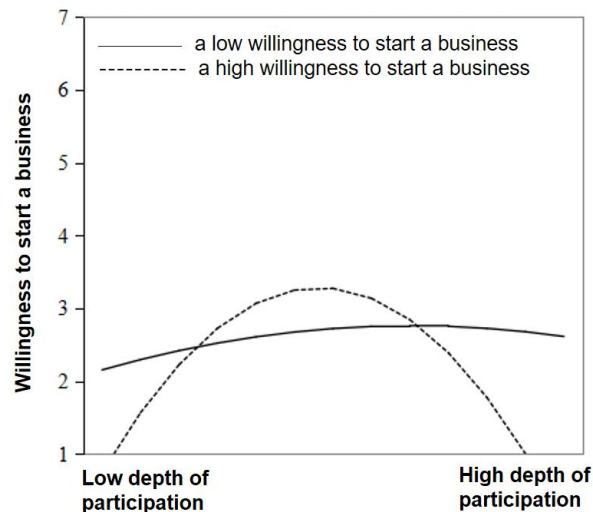


Figure 2: The relationship between the depth of participation and the willingness to start a business.

#### 4.2. The Impact of Cognitive Flexibility on the Depth and Breadth of Participation and the Willingness to Start a Business

The empirical results of this article show that cognitive flexibility positively affects the impact of the depth and breadth of participation on the willingness to start a business. That is, the higher the cognitive flexibility of the participants in the entrepreneurship competition, the greater the breadth and depth of participation in the competition, the greater the impact on the participants' willingness to start a business, the higher the breadth of participation, the more positive the impact on their willingness to start a business, the higher the depth of participation, and the more obvious the inverted U-shaped relationship between the depth of participation and willingness to start a business. Table 5 summarizes the test results of this study.

Table 5: Hypothesis test results.

Hypothetical serial number	Content	Test results
H1	There is an inverted U-shaped relationship between the depth of participation in the college student entrepreneurship competition and the willingness to start a business.	Hold out
H2	The breadth of participation in the college student entrepreneurship competition is positively affecting the willingness of participants to start a business.	Hold out
H3	Cognitive flexibility positively regulates the impact of the depth of participation on the willingness to start a business.	Hold out



Table 5: (continued).

H4	Cognitive flexibility positively regulates the impact of the breadth of participation on the willingness to start a business.	Hold out
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## 5. Conclusion

This study confirms that cognitive flexibility affects the impact of the depth and breadth of participation on the willingness to start a business, and it complements and improves the existing research on the willingness to start a business. In addition, this study refines the research on the impact of depth of participation on the willingness to start a business, further explores the relationship between the depth of participation and the willingness to start a business, and the truth behind it, and confirms that there is an inverted U-shaped relationship between the depth of participation in the entrepreneurial competition and the willingness to start a business. This also shows that the number of ideas does not matter. It is suggested to use a few ideas to participate in more entrepreneurship competitions to improve the participant's understanding of their own creativity, so as to better enhance their willingness to start a business.

In the known research on the willingness to start a business, most of the assumptions are studying the relationship, either the linear positive relation or the linear inverse relation, between factors such as participation, educational background, and macro environment, and there is no further study of the relationship between the square of different variables and the willingness to start a business. The inverted U-shaped relationship between the depth of participation in the entrepreneurial competition and the willingness to start a business proposed in the research hypothesis in this article is not mentioned in the current research on the willingness to start a business.

However, due to many reasons such as time constraints, limited self-experience, and insufficient knowledge, there are also some shortcomings in this study: the sample data of this study mainly comes from universities around Xi'an such as Xi'an University of Architecture and Technology in Xi'an, Shaanxi Province, so the universal applicability of the research results is limited. In addition, in the process of data collection, each participant's participation in the entrepreneurship competition at a different time means that the entrepreneurial environment at that time is different, and environmental factors may have an impact on the data, which is ignored in this analysis. Future research can continue to study whether and how environmental factors affect the willingness to start a business.

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