

# A STUDY ON THE INFLUENCE OF INNOVATION AND ENTREPRENEURSHIP EDUCATION ON ENTREPRENEURIAL BEHAVIOR

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**Abstract** - Innovation and entrepreneurship are an eternal driving force for national development, social progress, and essential support for high-quality development. In this study, innovation and entrepreneurship education, entrepreneurial motivation, entrepreneurial opportunity and entrepreneurial behavior are integrated into the same research framework model to understand the multiple influences of innovation and entrepreneurship education on entrepreneurial behavior from a multivariate perspective. The results show that innovation and entrepreneurship education, entrepreneurial motivation and entrepreneurial opportunity have sustainable positive effects on individual entrepreneurial behavior. Both entrepreneurial motivation and entrepreneurial opportunity have mediating effects on entrepreneurial behavior. This study broadens the research on the influence of innovation and entrepreneurship education on entrepreneurial behavior and provides a new perspective for the study of entrepreneurship. We use descriptive statistical analysis, exploratory factor analysis (SPSS 21.0), and path analysis (Smart PLS 3). The results demonstrate that the six hypotheses were supported: entrepreneurial opportunity has the strongest influence on entrepreneurial behavior, followed by entrepreneurial motivation, innovation, and entrepreneurship education. This study also shows that innovation and entrepreneurship education can not only directly affect entrepreneurial behavior, but also indirectly affect entrepreneurial behavior by stimulating entrepreneurial motivation and strengthening entrepreneurial opportunities. Moreover, the chain intermediary effect between entrepreneurial motivation and entrepreneurial opportunities can positively influence entrepreneurial behavior.

**Keywords:** Innovation and entrepreneurship education; Entrepreneurial behavior; Entrepreneurial motivation; Entrepreneurial opportunity

## I. INTRODUCTION

According to data released by China's Ministry of Education, the number of college graduates in 2022 reached 10.76 million, an increase of 1.67 million over 2021, with both the size and the growth reaching a record high. The proportion of college graduates who chose enterprises for employment was 34.21%, down 7.21 percentage points compared with 2021, and the entrepreneurship rate accounted for 4.25%, up 0.58 percentage points compared with 2021. Although college students have relatively rich knowledge reserves, as a young knowledge group, they still lack experience and ability in social practice (Liang, 2019). As a result, their entrepreneurial skills have become a matter of general national concern. Colleges and universities have a

relatively systematic and complete distribution of professional discipline systems and rich resources to support scientific and technological innovation. However, only 15% - 20% of Chinese universities' scientific and technical achievements can be converted into practical, productive forces, far lower than the 60 - 80% level in developed countries. It is urgent to strengthen the cultivation of innovative and entrepreneurial talents in Chinese universities. In the United States and other countries, the proportion of college students in entrepreneurship reaches 20 - 30%, while in China, it is less than 5% (Zhang et al., 2017). According to the survey, about one-third of college students hope to start their businesses in industries related to sustainable human and social development, such as the Internet, information technology (such as 5G communication technology), enterprise services, advanced manufacturing (AI application, hardware manufacturing), e-commerce, environmental protection, new energy, tourism, medical health and rural education. Potential entrepreneurs with strong entrepreneurial intentions are more likely to start a business than those with weak entrepreneurial intentions (Liang, 2019).

The ultimate goal of innovation and entrepreneurship education is to enable students to acquire practical entrepreneurial knowledge and apply specific skills to analyze market demand, explore business opportunities, stimulate entrepreneurial motivation, and cultivate innovative and entrepreneurial talents and skills. According to scholars' research, the entrepreneurial activities and entrepreneurship education college students participate in during their college years are conducive to improving their entrepreneurial behavior (Ning, 2020). The factors affecting entrepreneurial behavior are complex and diverse. Still, it is an indisputable fact that the effectiveness of innovation and entrepreneurship education needs to be improved. The mismatch between the high input of innovation and entrepreneurship education and the low output of entrepreneurial behavior is the internal reason of potential entrepreneurs and the external factors of the entrepreneurial environment. As a psychological driver, the positive effect of entrepreneurial market confidence on entrepreneurial behavior will also change when the entrepreneurial environment changes. There are significant differences in the entrepreneurial environment of different entrepreneurs, among which regional economy determines the resource endowment and orientation of the local market and is a critical environmental factor affecting the generation of entrepreneurial behavior (Chen, 2021). Entrepreneurs as the main body of economic activities in the market, any entrepreneurial decisions and specific actions will be affected by the local financial environment.

By combing through the text, the author finds that there are few research results on the factors affecting college students' entrepreneurial behavior in the academic circle, and at the same time, there are still no other corresponding results

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in the research on the relationship between innovation and entrepreneurship education, entrepreneurial motivation, entrepreneurial opportunity and entrepreneurial behavior integrated into the same model.

## II. HYPOTHESIS PROPOSAL AND THEORETICAL MODEL

### 2.1 Influence of innovation and entrepreneurship education on entrepreneurial behavior

Innovation and entrepreneurship education aim to cultivate students' innovative spirit, entrepreneurial awareness and entrepreneurial skills, that is, to train students how to adapt to social survival, choose their jobs and seek their careers, with the ultimate goal of enabling entrepreneurial candidates to establish their own companies and make contributions to the sustainable development of human beings and society (Tang, 2008). Hindle (2007) pointed out that innovation and entrepreneurship education enable students to acquire useful entrepreneurial knowledge and apply specific skills to analyze market demand, explore business opportunities, stimulate entrepreneurial motivation, and cultivate innovative and entrepreneurial talents and skills. Although the ultimate purpose of entrepreneurship education is not to cultivate entrepreneurs, we cannot deny the positive effect of entrepreneurship education on entrepreneurial behavior. Foreign scholars have recognized the teachable nature of entrepreneurship. Ning (2017) believed that the main purpose of innovation and entrepreneurship education is to promote the generation of entrepreneurial behavior, and innovation and entrepreneurship education positively impact entrepreneurial behavior. Some scholars have pointed out that entrepreneurship education is to cultivate individual spirit of innovation and enhance individual self-efficacy by providing students with a relaxed learning environment, to promote individuals receiving innovation and entrepreneurship education to carry out real entrepreneurial activities actively. The broad sense of entrepreneurial behavior proposed by Zhang Yuli (2003) includes the perception of opportunity, resource integration, the survival of new enterprises and finally, the growth of new enterprises. However, the narrow sense of entrepreneurial behavior only includes the perception of opportunity, resource integration and the survival of new enterprises. The Theory of Planned Behavior developed by Ajzen (1991) is based on the premise that the behavior needs an amount of planning that can predict the intention to adopt such behavior. This behavior is a function of beliefs that determine a person's attitude and intention (Andreas, 2012).

Based on the above theoretical basis and the research results of relevant scholars combined with actual observation, this study believes that individuals who have received innovation and entrepreneurship education are more likely to have entrepreneurial behavior. Therefore, the following hypotheses are proposed in this study:  
Hypothesis 1: Innovation and entrepreneurship education has a significant positive effect on entrepreneurial behavior.

### 2.2 The mediating role of entrepreneurial motivation

Entrepreneurial motivation drives entrepreneurial behavior, encouraging individuals with entrepreneurial

ability and conditions to start businesses. Entrepreneurs' motivation may change with different stages of struggle (Zhao, 2020). Individuals who have received innovation and entrepreneurship education have a relatively apparent tendency toward entrepreneurial activities. Innovation and entrepreneurship education in colleges and universities is the main factor affecting college students' entrepreneurial motivation, and a key factor affecting entrepreneurial success is entrepreneurial motivation. Entrepreneurial motivation is a precious and indispensable step in starting a company (Ajzen, 1991). Entrepreneurship education had a positive and significant impact on entrepreneurship motivation. (Sukirman, 2021). Therefore, stimulating and cultivating individual entrepreneurial motivation is essential in innovation and entrepreneurship education. Entrepreneurial motivation, ability and skills can be acquired through systematic innovation and entrepreneurship education (Carlos, 2021). Global Entrepreneurship Monitor divides entrepreneurs' motivations into opportunity and necessity. Motivations for entrepreneurship are strongly correlated with the sociodemographic characteristics of the entrepreneur, for example age, education, and family income. Entrepreneurship by opportunity does not necessarily happen in developed countries. In contrast, it should be noted that entrepreneurs by necessity do not seek to start an innovative business, nor do they perceive good opportunities in their context; However, they decide to become entrepreneurs as a way to overcome the lack of employment opportunities, suggesting that they seek to avoid possible risks (Angela, 2019). Therefore, the following hypothesis is proposed in this study.

Hypothesis 2: Entrepreneurial motivation mediates the positive influence of innovation and entrepreneurship education on entrepreneurial behavior. Innovation and entrepreneurship education have a positive effect on entrepreneurial motivation.

### 2.3 The mediating role of entrepreneurial opportunities

Entrepreneurial opportunity is the foundation and pillar of entrepreneurship research and an important bridge connecting the cognition and behavior of entrepreneurs. Many scholars have also conceptualized entrepreneurship as a process of opportunity exploitation (Shane and Venkataraman, 2000; Aldrich and Cliff, 2003). Shane and Venkataraman (2000) pointed out that finding, evaluating and using opportunities are the main processes for successful entrepreneurial operations. Some scholars believe that opportunities are discovered due to the impact of external factors previously existing in the market or industry (Shane, 2003), while scholars who hold the view of opportunity construction believe that opportunities are created internally by entrepreneurs (Wood, 2010). Some scholars argue that the formation of opportunity results from integrating opportunity discovery and opportunity construction (Vaghely, 2010). Bygrave and Minniti (2000) define an entrepreneur as creating an organization, identifying entrepreneurial opportunities, and enabling entrepreneurial behavior. From the perspective of entrepreneurs, entrepreneurship is the identification, discovery and creation of appropriate value for opportunities (Alvarez and Barney, 2004). It can be seen that entrepreneurial opportunity identification is a crucial link to complete entrepreneurial activities. For entrepreneurs, only by identifying and developing the most valuable

entrepreneurial opportunities can entrepreneurial opportunities be transformed into corporate performance and good returns. The observation of entrepreneurial practice shows that entrepreneurial opportunities are not static but dynamic with the change of external entrepreneurial situation. From the perspective of the generation of entrepreneurial opportunities, the evolution of the entrepreneurial situation may lead to the generation of new entrepreneurial opportunities and the demise of original entrepreneurial opportunities. Therefore, hypothesis 3 is proposed: Entrepreneurial opportunity mediates the positive influence of innovation and entrepreneurship education on entrepreneurial behavior. Entrepreneurial opportunity identification has a significant positive influence on entrepreneurial behavior.

Hypothesis 4: Innovation and entrepreneurship education positively affect entrepreneurial opportunities.

#### 2.4 The mediating chain role of entrepreneurial motivation and entrepreneurial opportunity

Entrepreneurial motivation is not a single simple but a multi-dimensional complex structure. Motivation is the antecedent factor for the generation of behaviors, and entrepreneurial motivation is the source of entrepreneurial behaviors and an important internal reason for entrepreneurs to carry out entrepreneurship. To a certain extent, it restricts college students' entrepreneurial activities and affects entrepreneurs' behaviours. Dubini (2014) summarized the motivations of various specific entrepreneurial activities such as achievement, welfare and money in his research. According to Erkko (2001) study and other scholars, entrepreneurial motivations can be classified into three categories: the need to realize self-worth, the desire for independence in life and career, and the change in family and individual economic conditions. From the perspective of the relationship between entrepreneurial motivation and entrepreneurial activities, Shane et al. (2003) argued that entrepreneurial activities revolve around opportunities, and entrepreneurial motivation drives the willingness and spontaneity of individuals to start businesses. Entrepreneurial motivation is divided into independent motivation, learning motivation, cognitive motivation and role motivation, which depends on the characteristics and particular tasks of entrepreneurs and is a kind of psychological tendency and internal motivation.

The classical literature of entrepreneurship believes that the essence of the entrepreneurial process is identifying and utilizing opportunities. Entrepreneurial opportunity is an essential link in entrepreneurship (Lumpkin, 2005). As the starting point of all entrepreneurial activities, entrepreneurial opportunity identification is the key to determining whether a potential entrepreneur can successfully start a business. Zhang Hong (2014), Davidson (2015) et al. summarized the influencing factors of entrepreneurial opportunity identification based on existing studies, including previous experience, human capital, cognitive ability, social network, etc. In entrepreneurship, entrepreneurial motivation and opportunity play an intermediary role in the relationship between innovation and entrepreneurship education and entrepreneurial behavior. Based on the entrepreneurial cognitive theory and the planned behavior theory, it is believed that the joint action of entrepreneurial motivation

and opportunity prompts individuals to produce actual entrepreneurial behavior (Diana, 2012).

Based on the above theoretical basis, this study believes that innovation and entrepreneurship education indirectly and positively affect entrepreneurial opportunities through the positive effect of entrepreneurial motivation, which is a necessary condition and the most important predictor of entrepreneurial behavior. Therefore, this study believed that one of how innovation and entrepreneurship education influence entrepreneurial behavior is "innovation and entrepreneurship education -- entrepreneurial motivation -- entrepreneurial opportunity -- entrepreneurial behavior". Therefore, the following hypothesis is proposed in this study: Hypothesis 5: Entrepreneurial motivation and entrepreneurial opportunity mediate and positively influence innovation and entrepreneurship education on entrepreneurial behavior. Entrepreneurial motivation has a positive effect on entrepreneurial behavior.

Hypothesis 6: As a medium, entrepreneurial motivation also positively impacts entrepreneurial opportunity.

Based on the theoretical basis and theoretical derivation of the above research hypotheses and combined with practical observation, the research model of this paper is proposed, as shown in Figure 1.

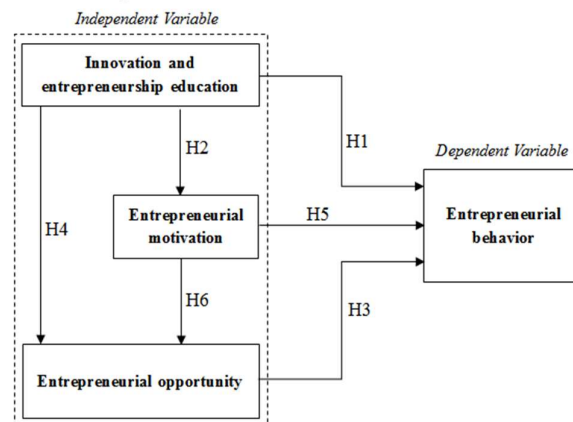


Figure 1: Theoretical Model

### III. METHODOLOGY

#### 3.1 Sample and data collection

In this study, data were collected by electronic questionnaire through Questionnaire Star APP. We tested our hypotheses in a sample of students who did not yet embark on a career path, the total number of questionnaires collected was 121, and the number of effective questionnaires was 113, with an effective questionnaire recovery of 93.4%. Among the 113 students, the majority were male (73), accounting for 64.6%; There were 40 female students, accounting for 35.4%. There are 38 students whose parents have entrepreneurial experience, accounting for 33.6%; 75 students, accounting for 66.4 %, of those whose parents had no entrepreneurial experience. 15 students came from developed cities, accounting for 13.3%; There were 98 students from underdeveloped cities, accounting for 86.7%. There are 23 students, accounting for 20.4%, whose annual family income is 100,000 to 200,000 yuan or above. The number of students whose annual family income is less than 100,000 yuan is 90, accounting for 79.6 %. The sample of this study was from

college students all over the country, which is widely distributed and has the reliability and universality of the research question.

### 3.2 Measurement tools

(1) SPSS 21.0 software was used for exploratory factor analysis to determine principal components and related factors.

(2) Use Smart PLS 3 software to conduct confirmatory factor analysis, construct the model and verify the hypothesis.

## IV. DATA ANALYSIS AND RESULTS

### 4.1 Exploratory factor analysis

TABLE I: CONSTRUCTION OF VARIABLE INDEX SYSTEM

Independent variable / dependent variable	Indicators	
Innovation and entrepreneurship education (IEE)	Entrepreneurial theory	A1
	Entrepreneurial skills	A2
	Entrepreneurship exchange	A3
	Entrepreneurial atmosphere	A4
	Entrepreneurial practice	A5
Entrepreneurial motivation (EM)	Interest driven	B1
	Entrepreneurial resources	B2
	Realize self-value	B3
	Become an entrepreneur	B4
	Gain profit	B5
Entrepreneurial opportunities (EO)	Adventurous spirit	C1
	High yield	C2
	Control risk	C3
	Seize the opportunity	C4
	self-confidence	C5
Entrepreneurial behavior (EB)	Condition maturity	D1
	Entrepreneurial passion	D2
	Entrepreneurial intention	D3
	Entrepreneurial ability	D4
	Start-up support	D5

Note: All items were scored on a 5-point Likert scale

In this study, entrepreneurial education, motivation, entrepreneurial opportunity and entrepreneurial behavior were measured using a five-point Likert scale. Among them, innovation and entrepreneurship education, entrepreneurial motivation, Entrepreneurial opportunity, entrepreneurial behavior each have five items. Entrepreneurial behavior (EB) is the dependent variable, with five relevant items explaining the dependent variable. There are three independent variables, namely, Innovation and entrepreneurship education (IEE), entrepreneurial motivation (EM), and entrepreneurial opportunities (EO). Each variable has its index system, and the indicators were chosen to explain and support the variables; using SPSS 21.0 software, factor analysis was carried out to obtain the sub-index of each variable. See Table 1.

The validity coefficient KMO and Bartlett's Test is 0.912, and the reliability coefficient  $\alpha$  is 0.947, both higher than 0.80. It shows that the four principal components have excellent internal consistency and high reliability. Sig is 0,

less than 0.05, indicating a significant difference. As can be seen from Table 2, there are 4 factors with Initial Eigenvalues more significant than 1, and the cumulative variance contribution rate is 73.947%. Factors A1, A4, B1, B5, C1, C2, D1 and D5 were deleted after principal component analysis to improve the cumulative contribution rate of factors. The contribution rate of factor accumulation increased from 73.947% to 82.382%. In addition, the lithotripsy diagram can assist in judging the number of factor extraction. When the broken line suddenly changes from steep to smooth, the number of factors corresponding from steep to smooth is the number of reference extraction common factors (4), as shown in Figures 2 and 3. After principal component analysis, 12 factors were extracted, and each common factor had three sub-factors (Table 3).

TABLE II: TOTAL VARIANCE EXPLAINED

Component	Initial Eigenvalues	(Total)	Rotation Sums of Squared Loadings (Cumulative %)	
			First time	Second time
1	10.094	21.157	21.881	
2	2.514	42.234	42.290	
3	1.168	61.416	62.398	
4	1.014	73.947	82.382	

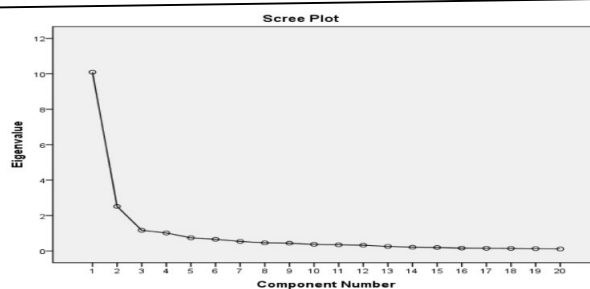


Figure 2: Extraction of Factor Number Lithotripsy Diagram (The First Time)

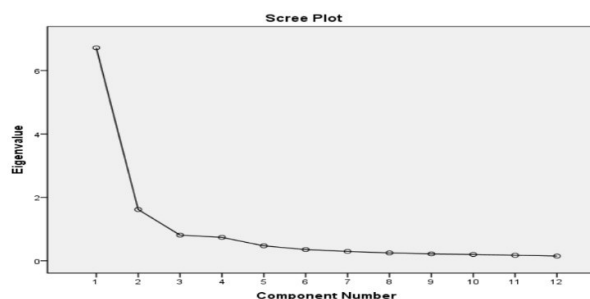


Figure 3: Extraction of Factor Number Lithotripsy Diagram (The Second Time)

TABLE III: PRINCIPAL COMPONENT ANALYSIS  
Rotated Component Matrix

	Component			
	1	2	3	4
VAR00002	.861			
VAR00001	.855			
VAR00003	.846			
VAR00005		.886		
VAR00004		.858		
VAR00006		.678		
VAR00009			.813	
VAR00008			.788	
VAR00007			.722	
VAR00011				.832
VAR00010				.749

VAR00012 | | | .643 |  
Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 5 iterations.

#### 4.2 Hypothesis Testing

In this study, we employed Partial Least Squares Structural Equation Model (PLS-SEM) and percentile Bootstrap method with deviation correction to analyze the data's reliability, validity and construct the path, test the fit degree of the model and verify the hypothesis.

##### 4.2.1 Reliability and validity

PLS-algorithm to calculate the reliability and validity of samples by us, in order to get an acceptable ratio, composite reliability (CR) refers to the reliability of a composite variable. The higher CR value is, the higher the internal consistency of the data structure is. All composite reliability should obtain a value greater than the threshold of 0.7, Cronbach's alpha of the 12 factors' composite reliability was more significant than 0.9, indicated that the reliability of the questionnaire was excellent, and the selected indicators were reliable, and the structure had a good internal consistency of data. Validity tests were conducted on data variables, and values should be greater than 0.7, it can be acceptable, the validity of the 12 factors was greater than 0.8 and Sig. probability values were 0 and less than 0.01, reaching a significant level. The validity test indicated that there was a correlation among all indicators. The construct's average variance extracted (AVE) must be greater than 50% threshold. The multicollinearity can be judged by VIF (variance inflation factor). The value of VIF is greater than 1. The closer it is to 1, the lighter the multicollinearity will be, otherwise, it will be heavier. Multicollinearity is indicated when the VIF value is greater than 10. If multicollinearity is found, it should be adjusted appropriately, such as by eliminating some arguments or using regularization methods. Table 4 illustrates the construct reliability and validity of the research.

TABLE IV: CONSTRUCT RELIABILITY AND VALIDITY

Items	Factor loading	VIF	Cronbach's Alpha	rhoA	CR	AVE
IEE			0.892	0.892	0.933	0.822
A2	0.911	2.720				
A3	0.913	2.783				
A5	0.897	2.462				
EM			0.893	0.904	0.933	0.822
B2	0.913	2.994				
B3	0.904	2.960				
B4	0.903	2.287				
EO			0.889	0.890	0.931	0.818
C3	0.906	2.559				
C4	0.895	2.442				
C5	0.912	2.828				
EB			0.864	0.867	0.917	0.787
D2	0.903	2.542				
D3	0.906	2.682				
D4	0.852	1.885				

The data from Table 4 and 5 illustrated that all the data aligned with each index's requirements. Discriminative validity in Table 5 is another evidence of validity, which means that when different methods are applied to measure

constructs, the observed values should be able to distinguish among them. The discriminant validity method has established the average variance extracted to check if the construct under investigation is valid.

TABLE V: DISCRIMINANT VALIDITY

	EB	EM	EO	IEE
EB	<b>0.887</b>			
EM	0.666	<b>0.907</b>		
EO	0.716	0.640	<b>0.905</b>	
IEE	0.566	0.372	0.548	<b>0.907</b>

EB (Entrepreneurial behavior); EM (Entrepreneurial motivation); EO (Entrepreneurial opportunity); IEE (Innovation and entrepreneurship education). The topic structure of discriminative validity is the correlation coefficient between latent variables, and the diagonal is the AVE value. As Table 5 shows, diagonal elements (bold) are the square root of average variance extracted (AVE) between the constructs and their measures. Off-diagonal elements are correlations between constructs. For discriminative validity, diagonal elements should be larger than off-diagonal elements. All correlations are significant at P is less than 0.05. Therefore, the discriminant validity of our study is acceptable.

##### 4.2.2 Path analysis

We used PLS Algorithm to calculate and establish a model and show the relationships among the variables, innovation and entrepreneurship education; entrepreneurship motivation; entrepreneurship opportunity and entrepreneurship behavior. Many studies showed that PLS-SEM is more convenient to calculate than SEM based on covariance, and it has the core function of calculation. In Figure 4, the regression coefficients of the four variables were 0.238, 0.372, 0.366, 0.506 and 0.344, respectively.

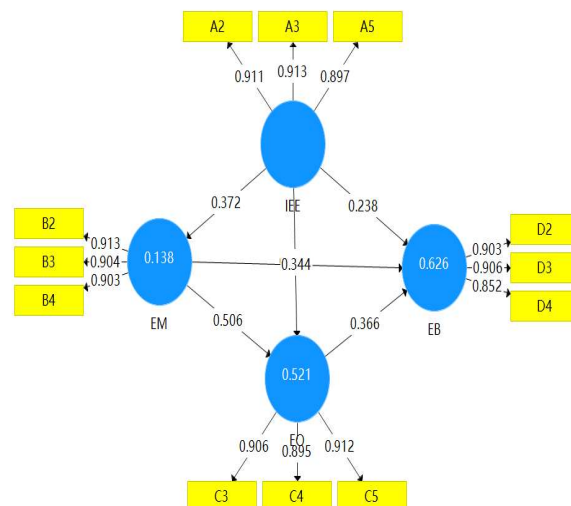


Figure 4: PLS Results of the Structural Model

PLS Algorithm calculation, the SRMR (Standardized Root Mean Square Residual) value in the model fit is 0.059 in the saturated and estimated models, which is less than 0.08. The values of d\_ULS and d\_G are 0.274 and 0.246 in both the saturation model and the estimation model, which are less than 0.95, indicating that the model has a good fitting degree

for this set of sample data. The path coefficient is the influence of the independent variable on the dependent variable. In general, what we think of as the standardized coefficient is between 1 and -1, so the closer it is to one, the more influential it is, and the more critical it is. If the normalized coefficient has a large or small influence, its absolute value ranges from 0 to 1, generally not exceeding 1. (See Figure 5).

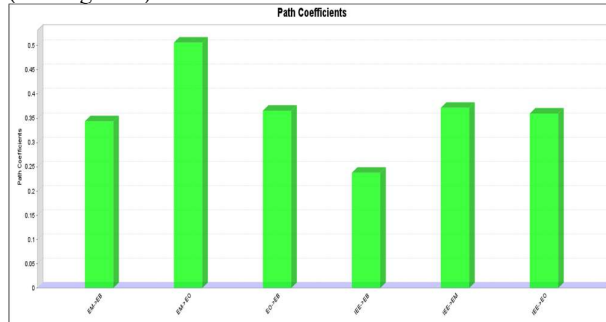


Figure 5: Path Coefficients

It can be seen from Figure 5 that entrepreneurship motivation has the most significant impact on media entrepreneurship opportunities (0.506), followed by innovation and entrepreneurial education have the second most significant impact on entrepreneurial motivation (0.372) and innovation and entrepreneurial education have the weakest impact on entrepreneurial behavior (0.238). It shows that entrepreneurial opportunity and entrepreneurial motivation partially mediate the influence of innovation and entrepreneurship education on entrepreneurial behavior.

The model's explanatory power, R squared, is also the standardized coefficient, which represents the explanatory ability of the independent variable to the dependent variable. Generally, R square cannot exceed 1 and the R<sup>2</sup> value obtained by the model was 0.626, indicating that our model has reached the required level. See Figure 6.

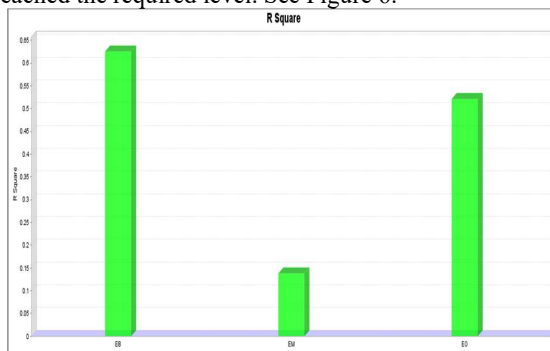


Figure 6: R Square

The larger the R square, the more ideal the choice of the independent variable. As shown in Figure 6, the independent variable entrepreneurial behavior (R squared 0.626, the largest value) has a strong explanatory ability to the dependent variable entrepreneurial opportunity (0.521) and entrepreneurial motivation (0.138), indicating that the choice of independent variable entrepreneurial behavior is ideal.

#### 4.2.3 Hypotheses testing

We use Bootstrap to calculate and replicate the potential variables of surface linkages and evaluate whether to accept or reject the proposed hypothesis. The correlation of the

resulting structural links determines the validity of the hypothesis. When the P value is less than 0.05, the null hypothesis can be accepted or rejected if the P value is greater than the critical value. The average factor score was used to get the average.

TABLE VI: HYPOTHESES TESTING

Path	Mean	SD	T-Statistics	P Values	Results
IEE→EB (H1)	0.238	0.084	2.828	0.005	Supported
IEE→EM (H2)	0.376	0.074	5.005	0.000	Supported
EO→EB (H3)	0.383	0.127	2.876	0.004	Supported
IEE→EO (H4)	0.358	0.080	4.517	0.000	Supported
EM→EB (H5)	0.328	0.111	3.089	0.002	Supported
EM→EO (H6)	0.509	0.081	6.243	0.000	Supported
IEE→EM→EO	0.192	0.051	3.692	0.000	Supported
EM→EO→EB	0.199	0.083	2.229	0.026	Supported
IEE→EO→EB	0.134	0.047	2.793	0.005	Supported
IEE→EM→EB	0.121	0.044	2.875	0.004	Supported

Note: N=113; P value is less than 0.05; Standard Deviation (SD).

It can be seen from Table 6 that all six hypotheses are valid; that is, innovation and entrepreneurship education have a positive impact on entrepreneurial behavior, entrepreneurial motivation and entrepreneurial opportunity. At the same time, entrepreneurial opportunity has a positive effect on entrepreneurial behavior; entrepreneurial motivation also has a positive impact on entrepreneurial behavior and entrepreneurial opportunity. According to specific indirect effects calculations and Figures 5 and 6, it is concluded that innovation and entrepreneurship education impact entrepreneurial behavior, and entrepreneurial motivation and opportunities as media have a more significant effect on entrepreneurial behavior.

## V. CONCLUSION

### 5.1 Theoretical contribution

First of all, this paper studies the relationship between innovation and entrepreneurship education and entrepreneurial behavior from the perspective of multiple variables, verifies the relationship and mechanism of the direct influence of innovation and entrepreneurship education on entrepreneurial behavior and the intermediary effect in various dimensions and paths, broadens the research on the influencing factors between innovation and entrepreneurship education and entrepreneurial behavior, and provides a new perspective for the study of entrepreneurship.

Secondly, this paper verifies the mechanism of the positive influence of entrepreneurial motivation and entrepreneurial opportunity as intermediary variables in innovation and entrepreneurship education on entrepreneurial behavior:

The chain mediation mechanism of innovation and entrepreneurship education → entrepreneurial opportunity → entrepreneurial motivation → entrepreneurial behavior follows the process of "stimulus-opportunity-motivation-behavioral response", and explores the process, path, coefficient and direction of innovation and entrepreneurship



education's influence on entrepreneurial behavior intuitively, systematically and comprehensively from multiple perspectives. Although entrepreneurial education can positively and significantly affect entrepreneurial behavior, it does not mean people are willing to have entrepreneurial behavior after receiving entrepreneurial education. Many complex factors affect entrepreneurial behavior, so it is difficult for individuals to have entrepreneurial behavior when their entrepreneurial motivation and entrepreneurial opportunity are weak. This research model shows that in addition to the direct impact of innovation and entrepreneurship education on entrepreneurial behavior, innovation and entrepreneurship education also positively affect entrepreneurial motivation, entrepreneurial opportunity and their combined effects on entrepreneurial behavior. The absence of each link will weaken the explanatory power of this model.

Finally, for the first time, the four variables of innovation and entrepreneurship education, entrepreneurial motivation, entrepreneurial opportunity and entrepreneurial behavior are integrated into the same theoretical model to explore the relationship between the four influences. The empirical conclusions enrich, improve and broaden the theoretical achievements of entrepreneurship research and provide Empirical, theoretical references for subsequent studies.

In terms of practical value, this study shows that innovative and entrepreneurial education can not only directly affect entrepreneurial behavior, but also indirectly affect entrepreneurial behavior by stimulating entrepreneurial motivation and strengthening entrepreneurial opportunities. Moreover, the chain intermediary effect between entrepreneurial motivation and entrepreneurial opportunities can positively influence entrepreneurial behavior. If individual potential entrepreneurs receive innovation and entrepreneurship education, they will not necessarily have entrepreneurial behavior. However, when their entrepreneurial motivation and entrepreneurial opportunity are relatively strong, their entrepreneurial behavior probability will be higher. Therefore, colleges and universities should stimulate the entrepreneurial motivation and strengthen entrepreneurial intention in various ways according to the theoretical driving effect of innovation and entrepreneurship education → entrepreneurial motivation → entrepreneurial opportunity → entrepreneurial behavior, to make entrepreneurial behavior more likely.

## 5.2 Empirical research conclusion

In this study, entrepreneurial motivation and entrepreneurial opportunity were used as intermediaries to build a mechanism model to impact innovation and entrepreneurial education on entrepreneurial behavior, and the hypothesis proposed in this study was verified by analyzing the sample data of 113 students from two undergraduate universities in two different provinces. The following conclusions are drawn:

- (1) Innovation and entrepreneurship education have a significant positive impact on entrepreneurial behavior.
- (2) The significant positive impact of innovation and entrepreneurship education on entrepreneurial behavior can be transmitted through entrepreneurial motivation and entrepreneurial opportunities.

- (3) In the chain mediation model, entrepreneurial opportunity's single mediating effect is more significant than entrepreneurial motivations. The single mediating impact of entrepreneurial motivation and entrepreneurial opportunity is between the above two mediating effects, and all the mediating variables partially mediate.

In order to increase the entrepreneurial behavior of college students and relieve the employment pressure, the first step is to strengthen the theoretical foundation of innovation and entrepreneurship for college students with low entrepreneurial motivation and opportunities to view entrepreneurship rationally and weaken or eliminate their fear of entrepreneurial failure. The second step is to improve the integration of theory and practice for college students with medium entrepreneurial motivation and opportunities and further clarify their entrepreneurial direction. The third step is to provide more practical options for college students with high entrepreneurial opportunities and incentives and improve their entrepreneurial ability and other comprehensive qualities through practical experience to strengthen the entrepreneurial direction and promote entrepreneurial behavior.

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