

Entrepreneurial education, entrepreneurial ability and entrepreneurial intention of college students: Basis for entrepreneurial competency framework

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Abstract

This study attempts to explore the impact of entrepreneurial education, entrepreneurial ability and entrepreneurial intention on college students' entrepreneurship, so as to provide a basis for constructing the framework of college students' entrepreneurial ability. Through empirical research, descriptive statistics and reasoning analysis were carried out on the questionnaire data of 385 respondents using SPSS 28 software. This study aims to measure the degree of satisfaction of college students' entrepreneurship education in Pingdingshan City from three aspects: "entrepreneurship curriculum, entrepreneurship practice and entrepreneurship convenience", and determine college students' entrepreneurship ability from three aspects: "value creation ability", "innovation ability" and "resource utilization ability". To evaluate the entrepreneurial intention of college students from the aspects of "perceived desirability", "perceived feasibility" and "behavioral tendency", examine the relationship among the three variables of entrepreneurial education, entrepreneurial ability and "entrepreneurial intention", and put forward an effective management framework of entrepreneurial competence of college students. Through the evaluation and analysis of the correlation dimensions of the three variables, this study concludes that there is a significant positive correlation between entrepreneurial education, entrepreneurial ability and entrepreneurial intention, that is, the better entrepreneurial education, the stronger entrepreneurial ability and entrepreneurial intention; The higher the entrepreneurial ability, the better the entrepreneurial education and the clear entrepreneurial intention; The stronger the entrepreneurial willingness, the higher the entrepreneurial ability and the deeper the entrepreneurial education. This paper proposes that the effective management framework of college students' entrepreneurial competence consists of three aspects: entrepreneurial education, entrepreneurial ability and entrepreneurial intention. Finally, on the basis of this research, the author also puts forward some relevant suggestions to promote the successful entrepreneurship of college students, which has certain empirical significance for the high-quality innovation and entrepreneurship education reform in colleges and universities.

Keywords: college students, entrepreneurial education, entrepreneurial ability, entrepreneurial intention, entrepreneurial competency framework

Entrepreneurial education, entrepreneurial ability and entrepreneurial intention of college students: Basis for entrepreneurial competency framework

1. Introduction

Entrepreneurship Education is a brand new educational concept, which was put forward by UNESCO in 1989 at the symposium on "The Development Trend of International Education for the 21st Century", at which the concept of "Enterprise Education" was first put forward, which was later translated as entrepreneurship education. College students' entrepreneurship education originated in the United States in the 1940s, and the source was the opening of the MBA course "Management of New Enterprises" in Harvard Business School in February 1947. In the late 1960s, based on the important impact of entrepreneurial entrepreneurs on the economic and social structure of the United States and the world, several outstanding economists represented by Professor Timmons in the United States of America Business School predicted that "the United States is in a quiet great change" (Tan Yunxue, et. al., 2020), that is, the so-called "entrepreneurial revolution". Since then, a new model of "entrepreneurship education" has been proposed. Entrepreneurial education is a systematic project, and entrepreneurial behavior training is a complex dynamic link affected by various factors. According to the common understanding that entrepreneurship can be taught by college students, entrepreneurship education is a preconditioned variable for the cultivation of college students' entrepreneurial behavior. However, entrepreneurship education is not a necessary condition for the development of entrepreneurial behavior. Whether an individual who has received entrepreneurial education is willing to have entrepreneurial behavior is also mainly affected by entrepreneurial intention. It plays an important role in developing entrepreneurial activities for college students.

Entrepreneurship is the core driving force for the economic growth of a country or region. Entrepreneurship can promote economic development, industrial upgrading and the transformation and upgrading of economic structure, while creating jobs and promoting social and technological progress (Hathaway et al. 2014). Entrepreneurship is the catalyst to promote a country's economic growth, while entrepreneurial competence is the basis for the implementation of entrepreneurial behavior, and entrepreneurial spirit is the decisive factor to achieve today's economic vitality and regional competitiveness (Zaryab et al. 2018). Strengthening innovation and entrepreneurship is the trend of world development and the source of driving force for building an innovation-oriented country. Innovation and entrepreneurship education is the mission of higher education. President of China secretary Xi Jinping specify "Innovation and entrepreneurship education should run through the whole process of talent training, cultivate creative talents with creative education, and create an innovative country with creative talents." College students' innovation and entrepreneurship education plays an important role in promoting the all-round development of students, promoting the enhancement of college students' entrepreneurial ability, improving the quality of higher education, and serving the construction of an innovative country. As China's economic and social development is in a period of transition and its industrial structure is in a period of adjustment, it is not only an inherent requirement of economic and social development, but also an important historical mission to promote the high-quality development of China's economy to comprehensively cultivate college students' innovative and entrepreneurial spirit and enhance their innovative and entrepreneurial ability.

At present, innovation and entrepreneurship education has become a new breakthrough in the development of quality education in China, a new exploration of higher education personnel training mode, a new platform for shaping the entrepreneurial spirit of college students and cultivating innovative talents, and a strong intellectual support for the construction of an innovative country (Li Xingguang, 2020). In recent years, China has completed the top-level design of innovation and entrepreneurship education at the national level, introduced a number of relevant policies to promote the development of innovation and entrepreneurship among college

students, and achieved remarkable results in innovation and entrepreneurship education reform. But the development of innovation and entrepreneurship education in China still lags behind that of Western developed countries (Xu Xiaozhou et al. 2017). Compared with the advanced entrepreneurship education concept, complete education system and entrepreneurship conditions in the United States, Japan and other countries, China's innovation and entrepreneurship education is still in its infancy. According to the Global Entrepreneurship Watch (GEM) 2022/2023 China report, the comprehensive evaluation score of China's entrepreneurial environment is 5.0 points, ranking 6th among G20 economies, which is in the top position, but the school innovation and entrepreneurship education is relatively weak in China's entrepreneurial environment, and the proportion of Chinese entrepreneurs who think they have entrepreneurial ability is low, only 29.8%. This is significantly lower than the average of 44.86 percent for other G20 countries. College students are energetic, knowledgeable, responsible and aggressive, which is an important group for the implementation of entrepreneurial actions. At present, although the number of Chinese college students starting businesses is increasing, compared with developed countries, the number of Chinese college students who carry out entrepreneurial activities and the proportion of successful entrepreneurs are very low. There are various factors affecting the small number of Chinese college students starting businesses and the low success rate of entrepreneurship. However, through analysis, it is found that the most fundamental reasons are not strong entrepreneurial intention and insufficient entrepreneurial competence of college students. How to do a good job in innovation and entrepreneurship education in colleges and universities, cultivate college students' innovative spirit and entrepreneurial consciousness, improve entrepreneurial ability and willingness, and build an efficient entrepreneurial human resource management framework are important issues facing the current entrepreneurship education in colleges and universities.

Entrepreneurial competence is an important factor that directly affects entrepreneurial behavior, entrepreneurial willingness is a key factor driving college students' entrepreneurial behavior, and entrepreneurial education and entrepreneurial ability are decisive factors in the formation of entrepreneurial willingness (Li Fang, 2019). In other words, there may be a mechanism of action among entrepreneurial education, entrepreneurial ability and entrepreneurial intention. Entrepreneurial education is the basis for the improvement of entrepreneurial ability and the formation of entrepreneurial intention, entrepreneurial ability is the guarantee for the realization of entrepreneurial education and entrepreneurial intention, and entrepreneurial intention is the goal of entrepreneurial education effectiveness and entrepreneurial ability practice. The cultivation of college students' entrepreneurial competence should be influenced by entrepreneurial education, entrepreneurial ability and entrepreneurial intention. The theoretical circle should conduct a more in-depth empirical investigation on the mechanism of this mechanism. However, through the advanced search on CNKI, it is found there are few literatures on the entrepreneurial competence of college students, a special entrepreneurial group at home and abroad. Existing researches on entrepreneurial competency mainly focus on the category of entrepreneurial entrepreneurs, and few focus on college students. Although there are certain commonalities in the competencies required by entrepreneurs, they are not exactly the same for different entrepreneurial objects in different environments, stages and tasks (Liao Yunxia, 2015). The influence of entrepreneurship education on college students' entrepreneurial behavior is very complex, both direct and indirect. At the same time, the factors that affect entrepreneurial ability are also extremely diverse and complex. Based on this, based on the review of relevant literature, this study integrates entrepreneurial education, entrepreneurial ability and entrepreneurial intention into the same research, attempts to explore the influence mechanism and effect degree of entrepreneurial education and entrepreneurial ability on entrepreneurial intention of college students, studies the relationship among entrepreneurial education, entrepreneurial ability and entrepreneurial intention from a multivariate perspective, and proposes the entrepreneurial competence management framework of college students. It has enriched entrepreneurial theory and competency theory.

Objectives of the Study - This study explores the impact of entrepreneurial education, entrepreneurial ability and entrepreneurial intention on college students' entrepreneurship, and provides a basis for constructing the framework of college students' entrepreneurial ability. Specifically, this aimed to measure the level of

satisfaction on entrepreneurship education of college students in Pingdingshan from three aspects: "entrepreneurship curriculum, entrepreneurship practice and entrepreneurship convenience"; determine the college students' entrepreneurial ability from the aspects of "value creation, innovation ability and resource utilization, and evaluate the college students' entrepreneurial intention from three aspects: perceived desirability, perceived feasibility and behavioral tendency. The study also tested the significant relationship among the three variables of entrepreneurial education, entrepreneurial ability and entrepreneurial intention. It also proposed entrepreneurial competency management framework for college students.

2. Methods

Research Design - A descriptive study design was used to fully and accurately interpret the findings. According to Rahi (2017), a descriptive research method is a study that obtains facts, data, and information relevant to the current state, providing an accurate profile of a situation, person, or event. Polit et al.(2014) also share that descriptive research aims to study and monitor generated feelings that cannot be recognized by impartial factors. Descriptive methods can help researchers gain a deeper understanding of a problem and its complexity, provide more detailed information, and ultimately improve research results. Using descriptive method, this paper aims to analyze the current situation of innovation and entrepreneurship education in the surveyed universities through data processing, and describe and analyze the characteristics, behaviors and relationships of current college students' entrepreneurship education, entrepreneurial ability and entrepreneurial intention.

The researcher seeks to gather information from the respondents through providing survey questionnaires and distributing these to them. This descriptive kind of research was helpful in collecting the respondents' data efficiently. The research design of this paper is as follows: First of all, a large number of literature related to entrepreneurial education, entrepreneurial ability and entrepreneurial intention were intensively read by the literature research method to determine the research theme of this paper, sort out the variables involved in literature research, understand the research results of domestic and foreign scholars on these variables, and analyze the definition and importance of each research variable. Taking teachers and students at universities in Pingdingshan City as research samples, according to the shortcomings of existing literature research and practical work, the main dimensions and indicators of structured questionnaire were selected.

Secondly, questionnaire research method was adopted to conduct preliminary survey in the form of interviews with some students, graduates and teachers engaged in entrepreneurship education. Questionnaire design was conducted according to the survey results and a small range of experimental tests were conducted. After returning visits to the subjects, According to the results of the return visit and the results of descriptive statistical analysis, validity analysis and reliability analysis of the test samples, the scale items were optimized and improved, and the measurement questionnaire of this study was determined. Third, descriptive statistical methods are adopted. In this paper, the multi-dimensional analysis of university entrepreneurship education is carried out accurately, the research topic is analyzed from different perspectives, and the three variables are selected for descriptive statistical analysis. The obtained data are objective and have statistical significance, which is conducive to the analysis of the research objectives of this paper. Based on inference statistical analysis method and correlation analysis results, the complex relationship between target variables is studied, and the regulating and mediating roles involved are further analyzed.

Participants of the Study - The survey objects of this paper are mainly teachers and students of 6 universities in Pingdingshan City. There are two main ways to issue questionnaires. The first method is to send questionnaires to pre-determined research objects, which are mainly selected from students and teachers engaged in entrepreneurship education by the teaching management departments of colleges and universities, and fill in and collect them in the form of electronic questionnaires. The research objects are mainly college students, who are the education objects of entrepreneurship education in colleges and universities. They have a clearer understanding of the benefits of entrepreneurship education and can make more accurate judgment,

understanding and feedback on the research content, so as to ensure the objective truth and reliability of the questionnaire research data. Secondly, by entrusting the contact person to issue and collect questionnaires to the college students who have graduated in the past two years, the survey is carried out in the form of electronic questionnaires. A total of 600 questionnaires were distributed in this survey. A total of 443 questionnaires were collected by grade sampling, with a recovery rate of 73.83%. Through checking and sorting out the filling of the collected questionnaires, the questionnaires with more missing data were deleted. After screening, 385 valid questionnaires were obtained, which met the requirements of questionnaire investigation.

Instruments of the Study - The questionnaire content involved in this study is mainly formulated from the research dimension of three variables: "entrepreneurship education, entrepreneurial ability and entrepreneurial intention", and the dimension of each variable is expressed as a question that can be answered to measure it. The 4-level Riche scale was adopted :1 represents "completely disagree"; 2 indicates "disagree"; 3 stands for "agree"; 4 stands for "Totally agree." The questionnaire consists of two parts. The first part includes the personal data of the respondent, including gender, identity, grade, educational background, etc. The second part is designed according to the three variables of "entrepreneurial education, entrepreneurial ability and entrepreneurial intention". In the process of questionnaire production, the dimensions of each module are designed as follows: The first module is the variable of "entrepreneurship education", which is designed from the three dimensions of "entrepreneurship curriculum, entrepreneurship practice and entrepreneurship convenience". The second module is the variable of "entrepreneurial ability", which is designed from three dimensions of "value creation, innovation ability and resource utilization". The third module is the variable of "entrepreneurial intention", which is designed from three dimensions of "perceived desirability, perceived feasibility and behavioral tendency". Each variable in this study involved three dimensions, each dimension had five survey questions, and a total of 45 questions were designed.

Table 1

Test of Reliability of the Study

| Indicator | Cronbach Alpha | Remarks |
|------------------------------|----------------|-----------|
| Entrepreneurship course | 0.943 | Excellent |
| Entrepreneurial practice | 0.928 | Excellent |
| Entrepreneurship convenience | 0.941 | Excellent |
| Value creation | 0.918 | Excellent |
| Innovation ability | 0.915 | Excellent |
| Resource utilization | 0.935 | Excellent |
| Perceived desirability | 0.914 | Excellent |
| Perceived feasibility | 0.888 | Good |
| Behavioral tendency | 0.916 | Excellent |

George and Malley (2003) provide the following rules of thumb">0.90 – Excellent, >0.80 – Good, >0.7 – Acceptable, >0.60 – Questionable, >0.50 – Poor, and <0.50 –Unacceptable”

Data Gathering Procedure - Under the guidance of the supervisor of the research paper, the researcher selected the research topic according to the hot topics of innovation and entrepreneurship education in Chinese universities and related academic research, and sorted out the scientific and logical nature of the questionnaire according to the research content of the paper, and obtained the main empirical data of the study. The questionnaire was anonymously distributed to the surveyors through the Wenjuanxing APP platform. The Wenjuanxing is a professional online questionnaire survey software, with the characteristics of safety, fast, detailed statistical analysis. The specific steps are as follows:

First of all, the thesis proposal report is completed under the guidance of the supervisor, and after the defense, review and approval, the questionnaire content can be formulated according to the research objectives. Secondly, before large-scale distribution of questionnaires, 30 respondents were selected as a small sample to conduct a pre-analysis of the reliability and validity of the questionnaires, so as to ensure the scientific, accurate and rational structure of the questionnaires. Thirdly, according to the reliability and validity evaluation results of the small sample structure, the questionnaire was improved again under the guidance of the supervisor, and then the large-scale questionnaire was issued with the approval of the director of the graduate school to ensure the

feasibility of the empirical analysis. Fourth, before sending out the questionnaire, contact the student administration at the university of the respondents to obtain approval for data collection and determine the exact number of respondents so that the sample can be accurately counted. Questionnaires will be distributed to surveyors online to ensure high quality participation in the survey. Fifth, collect the questionnaires, sort out the valid questionnaires, summarize the survey data and submit it to the thesis teacher for guidance. After the feasibility review of the survey data is passed by the graduate School, the data analysis can be carried out and the thesis writing can be completed. Before the large-scale distribution of questionnaires, the researchers conducted a preliminary questionnaire survey with a small sample to obtain a reliability evaluation. As shown in Table 1: Reliability results showed that entrepreneurship courses (0.943), entrepreneurship practice (0.928), entrepreneurship convenience (0.941), value creation (0.918), innovation ability (0.915), resource utilization (0.935), perceived desirability (0.914), perceived feasibility (0.888), and behavioral tendency (0.916). It shows that the items of each dimension have high internal consistency.

Ethical Considerations - Ethical issues will be considered in conducting this research, ensuring that all information collected is used only for research purposes, and guaranteeing the quality and integrity of the research. The researcher will seek the consent of the investigator unit leader by means of correspondence to ensure that the target investigator is prepared to answer the questions involved in the study. Respondents' personal information and survey content will be collected anonymously, and they will not be asked to fill in their names when answering questions, ensuring the confidentiality of the respondents. The researchers will also ensure that the respondents voluntarily answer the questionnaire according to their own wishes, and put the safety of the respondents in the first place to ensure that the research participants will not be harmed.

Data Analysis - This study designs and codes questions corresponding to different dimensions of the three core variables and coded to realize the digital structure of statistical data, and module evaluation was carried out by means of pre-processing and statistical transformation, which was convenient for the early analysis and statistical analysis. Statistical analysis methods were adopted for the overall data analysis in this study, including statistical inference analysis and descriptive statistical analysis. First of all, a preliminary description is carried out to make a statistical analysis of the common characteristics of the three variables, and a general description is given by frequency distribution and weighted mean. Secondly, according to the rho index in the data analysis, the weighted mean and ranking method are used to evaluate the current situation of innovation and entrepreneurship education for college students in Pingdingshan from the three aspects of "entrepreneurship courses, entrepreneurship practice and entrepreneurship convenience". The satisfaction degree of college students' entrepreneurial ability is determined from three aspects: value creation, innovation ability and resource utilization. It also evaluates the influence of perceived desirability, perceived feasibility and behavioral tendency on college students' entrepreneurial willingness. The relationship among the three variables of "entrepreneurial education, entrepreneurial ability and entrepreneurial intention" is analyzed, and statistical reasoning is carried out, and an effective entrepreneurial competency management framework model is proposed to achieve the ultimate research goal of this study. The data in this study were calculated and processed by SPSS28 version statistical analysis method.

3. Results and discussion

Table 2

Summary Table on Entrepreneurship Education

| Key Result Areas | Composite Mean | VI | Rank |
|------------------------------|----------------|-------|------|
| Entrepreneurship Courses | 3.33 | Agree | 2 |
| Entrepreneurship Practice | 3.36 | Agree | 1 |
| Entrepreneurship Convenience | 3.32 | Agree | 3 |
| Grand Composite Mean | 3.34 | Agree | |

Legend: 3.50-4.00=Strongly Agree ; 2.50-3.49=Agree ; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 2 is a summary table of entrepreneurship education evaluation, whose composite mean value is 3.34,

shows that entrepreneurship education involves the consistency of three factors, and the evaluation reaches the satisfaction level. As can be seen from the data in Table 6, entrepreneurial practice factors rank first, with a composite mean value of 3.36. Entrepreneurship practice education is an important part of college students' entrepreneurship education. Innovation and entrepreneurship practice education aims to train students to become active subjects in social practice activities (Li Wenxin et al., 2021). To achieve this goal, students' personality and learning subject status must be respected, their initiative and creativity must be inspired to the maximum extent, and students' active thinking consciousness and critical spirit must be developed. Through entrepreneurial practice, college students' innovative thinking, entrepreneurial ability and entrepreneurial intention can be cultivated, form a correct concept of entrepreneurship, and improve their organizational management ability, social adaptability, teamwork ability and practical ability. Entrepreneurial practice enables students with entrepreneurial intentions to gain certain external resources in advance, laying a solid foundation for their future innovation and entrepreneurial activities, and the setting of the evaluation system and reward mechanism also improves the students' positive initiative to a certain extent. It can be seen that entrepreneurship practice education plays an important role in promoting students' innovation and entrepreneurship ability in entrepreneurship education.

The data from Table 2 shows that the composite mean value of entrepreneurship courses is 3.33. Ranking second, it can be seen that the construction of entrepreneurship courses in innovation and entrepreneurship education in Pingdingshan universities is not perfect, and students' satisfaction with benefits needs to be improved. Entrepreneurship education should be carried out for all students to achieve organic integration with general studies and professional courses, and targeted entrepreneurship education should be carried out for students with strong entrepreneurial intention and potential. It is necessary to clarify the training objectives and requirements of innovative and entrepreneurial talents in different majors, optimize the talent training program, formulate different course contents for students in different majors, different grades and different needs, and provide classified teaching to improve the effectiveness of entrepreneurship education. To deepen the integration of entrepreneurship education and professional education, the concept and content of entrepreneurship education should be reflected in the course setting, teaching content and teaching methods. It is necessary to pay attention to the cultivation of excellent teachers, and a team of teachers with good quality, relative stability and enthusiasm for entrepreneurship education is the basic force for cultivating students' entrepreneurial spirit, entrepreneurial willingness and entrepreneurial ability (Xu Xun 2017). It is necessary to formulate management measures for full-time and part-time innovation and entrepreneurship teachers, take improving teachers' understanding of innovation and entrepreneurship education and their entrepreneurial knowledge and ability as an important part of pre-service training, course training and backbone training, and clarify the importance of teachers in cultivating students' entrepreneurial awareness and entrepreneurial ability. To clarify the training process of innovative and entrepreneurial talents is of great practical significance for cultivating college students' entrepreneurial concept, enhancing entrepreneurial consciousness, learning entrepreneurial knowledge and improving entrepreneurial ability.

As can be seen from the data in Table 2, the composite mean value of entrepreneurial facilitation factors is 3.32. Ranked last. At present, Pingdingshan colleges and universities have achieved obvious results in the construction of entrepreneurship courses and practice in the reform and construction of entrepreneurship education, but the convenience of entrepreneurship is not detailed enough, and the support for entrepreneurship needs to be strengthened. The effectiveness needs to be improved in the aspects of convenient policy formulation, convenient venue construction, convenient facility provision, convenient consultation and guidance, and convenient policy publicity. Yao Xiaolian divides entrepreneurial support into four dimensions: school support, government support, family support and entrepreneurial network support (Yao Xiaolian, 2014). Gao Jianli et al. found that work support, benefit support and emotional support all have significant positive effects on entrepreneurial passion (Gao Jianli et al., 2018). Weng et al. (2019) believes that entrepreneurial support refers to the various resource support provided by the external environment (including politics, economy, culture, family environment, etc.) for entrepreneurial subjects to carry out entrepreneurial activities, which is also explained

from the perspective of the components of entrepreneurial support (Weng et al. 2019). The empirical research results of many scholars show that the satisfaction of entrepreneurship convenience and support can affect the entrepreneurial intention and behavior of college students (Liu, 2018). It can be seen that relevant social departments and schools should provide perfect entrepreneurship facilitation service mechanism. For example, the government should issue corresponding convenient policies and measures, and the school should also publicize the relevant convenience policies in a timely manner, so that students can fully understand, be familiar with and enjoy the convenience, improve college students' confidence in entrepreneurship, so that more entrepreneurs can get convenient help, and promote the success rate of entrepreneurship and economic development.

Table 3*Summary Table on Entrepreneurial Ability*

| Key Result Areas | Composite Mean | VI | Rank |
|----------------------|----------------|-------|------|
| Value Creation | 3.36 | Agree | 2 |
| Innovation Ability | 3.34 | Agree | 3 |
| Resource Utilization | 3.38 | Agree | 1 |
| Composite Mean | 3.36 | Agree | |

Legend: 3.50-4.00=Strongly Agree ; 2.50-3.49=Agree ; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 3 is a summary table of entrepreneurial ability evaluation, whose composite mean value is 3.36, it shows that the three factors related to entrepreneurial ability are consistent. As can be seen from the data, resource utilization factors rank first, with a composite mean value of 3.38, which indicates that effective control and utilization of entrepreneurial resources is the embodiment of strong entrepreneurial ability. Barney pointed out that entrepreneurial resources are the elements that a new enterprise must possess or can control in the process of survival and development in a competitive market. Alvareza sees entrepreneurship as a process of repeated resource allocation and coordination. Grand et al believe that entrepreneurial resources are a special resource that can enhance competitiveness and realize value creation of entrepreneurial enterprises, and are the basis for organizations to explore and utilize market opportunities and formulate development directions and strategies (Luo Xiangping, 2018). Howard, Harvard. Stephenson said that "entrepreneurs in the new business need to control resources, rather than occupy resources" the true meaning, entrepreneurial success does not necessarily have the ownership of resources, the key is the control and use of resources.

The data in Table 3 shows that the value creation factor ranks second, with a composite mean value of 3.36, which indicates that value creation is the spirit, mission and motivation of innovation and entrepreneurship of college students, and the successful realization of value creation is also the embodiment of the improvement of innovation and entrepreneurship ability. Chinese Premier Li Keqiang has repeatedly stressed that the core of "mass entrepreneurship and innovation" is to stimulate people's creativity, especially the creativity of young people. For college students, innovative consciousness and ability are the cornerstone of creating a brilliant life. Taking part in entrepreneurial activities is conducive to developing their own potential and creating more wealth for the society. College students' participation in innovation and entrepreneurship practice is very important for today's social and economic development and their own growth. Participating in the practice of innovation and entrepreneurship can give full play to the inherent potential of college students, create more social wealth, and realize their own life value. Students have realized that value creation is very important for personal growth and development.

It can be seen from Table 3, the composite mean value of innovation capability factors is 3.36, ranking third. Survey respondents generally believe that learning professional theoretical knowledge and strengthening research and reflection are the basis for cultivating innovation ability. Active participation in practical activities and paying attention to practical observation are helpful to stimulate innovation inspiration. The strength of innovation ability is also the embodiment of entrepreneurial ability satisfaction. In the era of rapid progress of Internet technology and fierce market competition, product update iteration is fast and life cycle is short, if enterprises do not innovate, they will soon die out. Innovation is the foundation of enterprise survival, the

internal driving force of development, and the guarantee of the successful development of The Times. The participants also recognized that they should learn the relevant knowledge of basic theoretical courses and specialized courses in college, pay attention to the extension of professional knowledge and the discovery process of new knowledge, and strive to explore their interests and hobbies. They should learn to consider problems in a scientific way of thinking, cultivate their innovative thinking, stimulate their intuition and find inspiration.

Table 4

Summary Table on Entrepreneurial Intention

| Key Result Areas | Composite Mean | VI | Rank |
|------------------------|----------------|-------|------|
| Perceived Desirability | 3.32 | Agree | 1 |
| Perceived Feasibility | 3.27 | Agree | 3 |
| Behavioral Tendency | 3.30 | Agree | 2 |
| Grand Composite Mean | 3.30 | Agree | |

Legend:3.50-4.00=Strongly Agree ;2.50-3.49=Agree ;1.50-2.49=Disagree;1.00-1.49=Strongly Disagree

Table 4 is a summary table of entrepreneurial intention evaluation, whose composite mean value is 3.30, indicating the consistency of the three factors cited in the table. As can be seen from the data, perceived desirability ranks first, with a composite mean value of 3.32, indicating that perceived desirability has a greater impact on entrepreneurial intention. Everything clear goal, perception desirable, will be determined to complete. The entrepreneurial intention is the same, it will be affected by self-perception, and self-perception of entrepreneurial activities will promote the formation of entrepreneurial intention. Boyd and Vosikis found that self-perception has a predictive effect on entrepreneurial intention and behavior. The formation of entrepreneurial intention will be affected by entrepreneurial self-efficacy, and the desirability of entrepreneurial self-perception is regarded as an important precursor variable of an individual's successful entrepreneurial ability and intention (Li Mingzhang, 2013).

According to the data in Table 4, behavioral tendency ranks second, with a composite mean of 3.30, this shows that behavioral tendency plays a key role in the formation of college students' entrepreneurial intention. Behavioral tendency is the internal motivation to determine their own entrepreneurial actions, which will combine their own personality, interests and resource advantages to determine the willingness to start a business, the way of starting a business, the time of starting a business, the region of starting a business and other aspects. Students with strong entrepreneurial behavior tendency have a firmer entrepreneurial attitude and clearer entrepreneurial intention, and the support of family, school and social environment will also have an impact on their entrepreneurial tendency. Based on the TPB theoretical model, Hu Yongqing (2022) conducted a study on the influencing factors of college students' entrepreneurial inclination. The research results show that personal characteristics and personal background have a direct impact on entrepreneurial attitude and an indirect impact on entrepreneurial inclination, and the policy support elements in the entrepreneurial environment have an important role in entrepreneurial inclination. It can be seen that the tendency of self-employment is affected by personal character, family, school and social environment, and has a positive push effect the formation of stable entrepreneurial intention.

The data in Table 4 show that perceived feasibility factors rank third, with a composite mean value of 3.27, lower than the composite mean value of perceived desirability and behavioral tendency, indicating that perceived feasibility has a weaker impact on college students' entrepreneurial intention than the other two factors. In my opinion, the perceived feasibility of entrepreneurship mainly reflects the impact of external environment on individuals, such as "I think hiring professional entrepreneurial mentors and industry mentors as guidance at the beginning of entrepreneurship can improve the feasibility of entrepreneurial activities", "I think the current entrepreneurial environment of college students is very good, and The Times have endowed college students with the courage and responsibility to dare to venture. In the evaluation of these two questions, students' satisfaction is high, which shows that the good environment of the university and the good era of the country have promoted the feasibility of college students' entrepreneurship. The behavioral tendency and perceived

desirability are more affected by the individual's internal subjective factors, such as personality, interest, ability, values and so on. The influence of internal factors on the realization of entrepreneurial behavior is greater than that of external factors. According to the iceberg theory, invisible factors determine explicit factors, which is also the general law of the development of things. It can be seen that the composite mean influence of perceived feasibility factors on entrepreneurial intention is lower than the other two factors, which is also reasonable.

Table 5*Relationship Between Entrepreneurship Education and Entrepreneurial Ability*

| Variables | rho | p-value | Interpretation |
|-------------------------------------|---------|---------|--------------------|
| Entrepreneurship Courses | | | |
| Value Creation | 0.790** | 0.000 | Highly Significant |
| Innovation Ability | 0.775** | 0.000 | Highly Significant |
| Resource Utilization | 0.783** | 0.000 | Highly Significant |
| Entrepreneurship Practice | | | |
| Value Creation | 0.829** | 0.000 | Highly Significant |
| Innovation Ability | 0.771** | 0.000 | Highly Significant |
| Resource Utilization | 0.802** | 0.000 | Highly Significant |
| Entrepreneurship Convenience | | | |
| Value Creation | 0.832** | 0.000 | Highly Significant |
| Innovation Ability | 0.816** | 0.000 | Highly Significant |
| Resource Utilization | 0.818** | 0.000 | Highly Significant |

** . Correlation is significant at the 0.01 level

The relationship between entrepreneurial education and entrepreneurial ability is shown in Table 5. Using weighted mean and ranking method, this paper evaluates the current situation of college students' innovation and entrepreneurship education from three aspects: entrepreneurship curriculum, entrepreneurship practice and entrepreneurship convenience. As you can see from the data in the table, the calculated rho value ranges from 0.775 to 0.832, indicating that there is a strong to strong direct relationship between entrepreneurial education and the sub-variables of entrepreneurial ability.

The relationship between entrepreneurial education and entrepreneurial ability was statistically significant because the obtained P-value was less than 0.01. Therefore, the data analysis of entrepreneurial education and entrepreneurial ability in the table shows that the better the entrepreneurial education, the higher the corresponding entrepreneurial ability, and vice versa. Entrepreneurship education helps college students to understand the background knowledge of self-employment, increase entrepreneurial awareness, cultivate innovative spirit, prepare for entrepreneurship, avoid the blindness and randomness of entrepreneurship, provide help and services for college students to successfully start businesses, and guide more college students to create value in entrepreneurial behavior. It can be seen that there is a significant strong to strong relationship between entrepreneurial education and entrepreneurial ability.

The results of the empirical investigation are highly consistent with the results of many studies. Entrepreneurship education can generate important entrepreneurial spirit, and entrepreneurship education and training can affect people's entrepreneurial attitude and motivation, and improve their management ability (Lu Qiuping, 2015). After studying the relationship between college entrepreneurship education and college students' entrepreneurial ability, it is pointed out that entrepreneurship education can teach students the skills of planning, marketing, decision-making and risk assessment needed in entrepreneurship, and then encourage students to be willing and dare to participate in entrepreneurial activities. (Shi Rong, 2015) believes that entrepreneurship education, through its organic combination with professional education, can help potential entrepreneurs effectively improve their entrepreneurial ability, so as to help educated individuals truly realize entrepreneurial behavior. (Li Qin, 2018) Through the investigation and analysis of thousands of college students, it is found that entrepreneurship education can significantly positively affect the entrepreneurial ability of college students.

Based on the above research, entrepreneurship education teaches students relevant knowledge of innovation and entrepreneurship, inspires students to participate in entrepreneurial practice activities, and popularizes entrepreneurial policies and regulations, etc. It can be seen that entrepreneurship education has a significant role

in promoting the improvement of entrepreneurial ability of educated individuals. In this way, students are encouraged to take practical actions to carry out entrepreneurial behaviors with more confidence.

Table 6

Relationship Between Entrepreneurship Education and Entrepreneurial Intention

| Variables | rho | p-value | Interpretation |
|-------------------------------------|---------|---------|--------------------|
| Entrepreneurship Courses | | | |
| Perceived Desirability | 0.720** | 0.000 | Highly Significant |
| Perceived Feasibility | 0.674** | 0.000 | Highly Significant |
| Behavioral Tendency | 0.732** | 0.000 | Highly Significant |
| Entrepreneurship Practice | | | |
| Perceived Desirability | 0.759** | 0.000 | Highly Significant |
| Perceived Feasibility | 0.700** | 0.000 | Highly Significant |
| Behavioral Tendency | 0.768** | 0.000 | Highly Significant |
| Entrepreneurship Convenience | | | |
| Perceived Desirability | 0.782** | 0.000 | Highly Significant |
| Perceived Feasibility | 0.737** | 0.000 | Highly Significant |
| Behavioral Tendency | 0.821** | 0.000 | Highly Significant |

** . Correlation is significant at the 0.01 level

The relationship between entrepreneurial education and entrepreneurial intention is shown in Table 6. As can be seen from the table, the calculated rho value ranges from 0.674 to 0.821, indicating that there is a strong to strong direct relationship between entrepreneurial education and the subvariables of entrepreneurial intention. The relationship between entrepreneurial education and entrepreneurial intention was statistically significant because the obtained P-value was less than 0.01.

The relationship between entrepreneurial education and entrepreneurial intention has also been explained and tested by a large number of literatures. Krueger et al. point out that entrepreneurship education can increase students' awareness of the feasibility of entrepreneurship by increasing their knowledge and self-confidence. A study of college graduates by Noel et al. showed that students majoring in entrepreneurship were more likely to start new businesses than students of other majors, and thus had a stronger entrepreneurial intent. Souitaris et al. empirically tested the positive correlation between entrepreneurship education programs and students' entrepreneurial intention, and believed that entrepreneurship education programs could help students learn knowledge about entrepreneurship, stimulate students' creativity, and provide or incubate certain resources. Wilson et al. also pointed out that entrepreneurship education can enable students to acquire entrepreneurial knowledge and improve their entrepreneurial intention by improving entrepreneurial efficacy and opportunity identification ability. After comparing the entrepreneurship education models of four famous American universities, Harvard, Stanford, Los Angeles and Chicago, Huang Guoqing et al. pointed out that these universities attach great importance to the cultivation of college students' entrepreneurial intention, and pay attention to the evaluation and guidance of college students' entrepreneurial intention in the course system setting. Help them understand and establish their own entrepreneurial needs, motivations, interests, ideals, beliefs, and worldviews. Ma Li Huang et al. research shows that with the continuous advancement of entrepreneurship education in universities, college students' self-entrepreneurship awareness is also increasing. There's a lot of research to proved entrepreneurship education has a positive effect on entrepreneurial intention (Hoang et al., 2020; Nowinski et al., 2019; Otache et al., 2019; Shrivastava,et. al., 2020).

Entrepreneurship education in colleges and universities not only enriches students' knowledge of entrepreneurship, but also enables them to take the initiative to carry out entrepreneurial activities in a good entrepreneurial environment, and enable them to actively carry out entrepreneurial practice activities in a good entrepreneurial environment, so they show a strong sense of entrepreneurship, and thus improve their entrepreneurial willingness. Therefore, it can be said that entrepreneurship education can through the study of entrepreneurship courses, it can change the entrepreneurial attitude of college students and promote the formation of college students' entrepreneurial intention.

Table 7*Relationship Between Entrepreneurial Ability and Entrepreneurial Intention*

| Variables | rho | p-value | Interpretation |
|-----------------------------|---------|---------|--------------------|
| Value Creation | | | |
| Perceived Desirability | 0.829** | 0.000 | Highly Significant |
| Perceived Feasibility | 0.786** | 0.000 | Highly Significant |
| Behavioral Tendency | 0.788** | 0.000 | Highly Significant |
| Innovation Ability | | | |
| Perceived Desirability | 0.818** | 0.000 | Highly Significant |
| Perceived Feasibility | 0.802** | 0.000 | Highly Significant |
| Behavioral Tendency | 0.806** | 0.000 | Highly Significant |
| Resource Utilization | | | |
| Perceived Desirability | 0.851** | 0.000 | Highly Significant |
| Perceived Feasibility | 0.769** | 0.000 | Highly Significant |
| Behavioral Tendency | 0.833** | 0.000 | Highly Significant |

** . Correlation is significant at the 0.01 level

The relationship between entrepreneurial ability and entrepreneurial intention is shown in Table 7. As can be seen from the table, the calculated rho value ranges from 0.769 to 0.851, This shows that there is a very important direct relationship between the two sub-variables of entrepreneurial ability and entrepreneurial intention. The relationship between entrepreneurial ability and entrepreneurial intention was statistically significant, and the obtained P-values were all less than 0.01.

Entrepreneurial ability is the ability of individuals to bravely put ideas into action, and it is a kind of practical ability (Wang Hongcai, 2022). The stronger a person's entrepreneurial ability, the higher the success rate of entrepreneurship, the more likely it is to promote its entrepreneurial activities. In the actual development of entrepreneurial activities, entrepreneurs will face a variety of new challenges, new income generation models, etc., need to solve various problems encountered in the entrepreneurial process, which requires entrepreneurs to have excellent entrepreneurial quality and ability, enough entrepreneurial skills, entrepreneurial knowledge and entrepreneurial experience can greatly promote personal entrepreneurial decision-making. Entrepreneurial intention refers to the subjective attitude of potential entrepreneurs on whether to engage in entrepreneurial activities, the mental state and behavioral tendency of potential entrepreneurs to "whether they want to start a business", and a general description of entrepreneurs' characteristics, entrepreneurial attitude and entrepreneurial ability (Zeng Tao et al., 2021). Koellinger et al. believe that having enough skills, experience and knowledge experience can greatly promote an individual's entrepreneurial decision. Scholar Ning Depeng pointed out that individual entrepreneurship entrepreneurial decision-making and entrepreneurial behavior (Ning Depeng, 2020).

Based on the above empirical survey results and many research results, it can be seen that there is a strong to strong relationship between entrepreneurial ability and entrepreneurial intention. The stronger an individual's entrepreneurial ability, the more firm and profound entrepreneurial attitude, and the stronger the entrepreneurial intention. Individuals in the overall entrepreneurial ability and strong entrepreneurial intention driven, entrepreneurial activities are more likely to succeed.

Entrepreneurial Competence Framework

This paper proposes an effective management framework for college students' entrepreneurial competence, which aims to call on colleges and universities to strengthen college students' entrepreneurial education and cultivate innovative and entrepreneurial talents (Huang Xiang, 2021), so as to cultivate students' entrepreneurial ability in a targeted way, enhance their entrepreneurial intention, promote more students to participate in entrepreneurial activities and serve national economic construction. According to the established entrepreneurial competency framework, colleges and universities can conveniently select college students with outstanding ability and good development potential to form entrepreneurial teams, and concentrate superior resources for key training. According to the established competency framework, students can better learn entrepreneurial knowledge, clarify entrepreneurial education ideas, consciously improve entrepreneurial ability, and clarify their entrepreneurial intentions and goals, so as to improve the participation and success rate of entrepreneurship. The

government can build a convenient entrepreneurship service platform according to the established competency framework, introduce more accurate entrepreneurship policies, create a good entrepreneurial environment, and create convenient conditions for more college students to participate in entrepreneurship and succeed in entrepreneurship.

As shown in Figure 1, entrepreneurial education, entrepreneurial ability, and entrepreneurial intent are essential elements of an effective entrepreneurial competency framework. Bird, Chandler and Hanks clearly point out that an entrepreneur's entrepreneurial competence is affected by factors such as the entrepreneur's experience, training and education. Parry believes that competency characteristics can be improved by training and developing students towards a standard that can be well accepted (Li Mingzhang, 2013). In the whole framework, the data results of the empirical study prove entrepreneurial education has a strong influence on entrepreneurial ability and entrepreneurial intention. Through entrepreneurship education, universities teach entrepreneurial knowledge, teach entrepreneurial skills, popularize entrepreneurial policies and regulations, and improve students' entrepreneurial ability to deal with relevant problems in entrepreneurial activities. In the process of entrepreneurship education, through the teaching of innovative spirit and entrepreneurial consciousness, students become more active in carrying out entrepreneurial activities, have a positive expectation of their own entrepreneurial future, and show a strong entrepreneurial intention. At the same time, entrepreneurial ability has a strong impact on entrepreneurial education and entrepreneurial willingness, and entrepreneurial willingness has a strong impact on entrepreneurial education and entrepreneurial ability. The higher the students' entrepreneurial ability, the deeper the entrepreneurial cognition and the stronger the entrepreneurial willingness. The stronger the entrepreneurial willingness of students, the more active the improvement of individual entrepreneurial ability, the more in-depth the entrepreneurial knowledge learning, and the more successful the entrepreneurial practice. In this study, the interpretive objects of this framework are mainly students in Pingdingshan City, Henan Province, China.

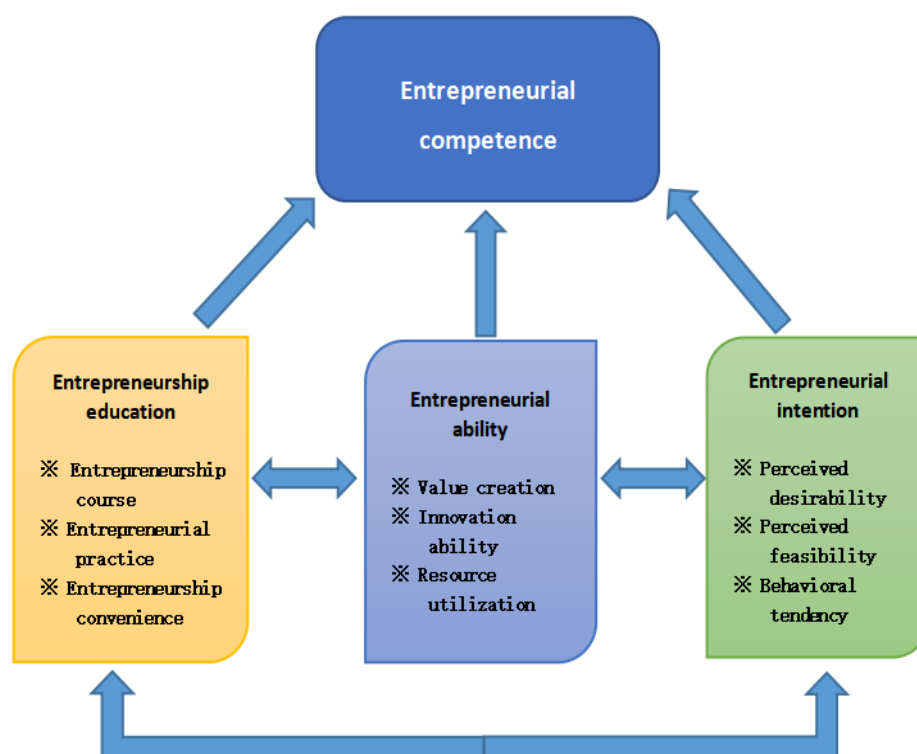


Figure 1. Entrepreneurial Competency Framework

4. Conclusions and recommendation

The respondents are satisfied on entrepreneurship education in universities in Pingdingshan from in terms of entrepreneurship courses, entrepreneurship practice and entrepreneurship convenience. Respondents moderately

achieved entrepreneurial ability in terms of value creation, innovation ability and resource utilization, achieving the expected research goal. College students have moderate entrepreneurial intention in terms of perceived feasibility and behavioral tendency. This study proves that there is a high significant relationship among entrepreneurial education, entrepreneurial ability, and entrepreneurial intention. This paper developed an entrepreneurial competency framework for college students.

The researchers suggest that relevant universities can increase the construction of entrepreneurship courses and the training of teachers' ability, establish efficient guarantee, incentive and evaluation mechanisms, and strengthen the basic work of the effectiveness of entrepreneurship education. Relevant colleges and universities may increase the construction of entrepreneurship convenience, take the initiative to connect with enterprises and the government to create more convenient resources and space conditions for college students to start businesses, and build a more convenient and superior entrepreneurial environment. Relevant colleges and universities may enrich entrepreneurial practice activities, pay attention to entrepreneurial team building, encourage teachers and students to participate in scientific research and entrepreneurial activities, and improve students' ability of innovation and entrepreneurship and value creation. Relevant universities may establish a personalized training mechanism for students with strong entrepreneurial intentions, provide personalized guidance services, cultivate excellent entrepreneurial models, and enhance the success rate and attractiveness of entrepreneurship. Universities can adopt the proposed effective management framework of entrepreneurial competence to promote the improvement of entrepreneurial intention by improving entrepreneurial education and entrepreneurial satisfaction, so that more students can take the initiative to carry out entrepreneurial activities. Future researches may use other variables of entrepreneurial competencies like strategic and opportunity seeking competencies.

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