Research on the Improvement of Entrepreneurial Ability of College students in private universities

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Abstract: We can get indicators of significantly affecting the ability of the private college students' entrepreneurship, as well as the relationship between them, so as to explore methods and way to improve the ability of private college students' entrepreneurship, by gathering private colleges students entrepreneurial data, summarize the influence factors of influence entrepreneurship, using SPSS statistical analysis software, using factor analysis and logistic regression analysis.

1. Introduction

In recent years, with the global economic recession, China's economic situation has been affected to some extent, coupled with rising real estate costs and labor costs. The production cost of enterprises has increased a lot, causing some multinational companies to move out of China's factories in China, and some production chains have broken, causing the shutdown of China's foundry factories and associated parts factories. In addition, the ups and downs of the stock market have jointly promoted the shortage of money in the circulation of the Chinese market. The Internet financial platform has been violently thundered and collapsed, which has had a certain impact on China's economic development and the personal production and life of enterprises. In the first half of this year, the United States launched a trade war against China, increased the export tax of our products, and banned some scientific and technological products from exporting to China, which made the export situation of our products bear certain pressure, while some industries were in trouble due to the lack of imported parts. In order to get rid of the predicament, the government of our country guides the development strategy of innovation and Entrepreneurship of the whole people, promotes entrepreneurship by innovation, and promotes employment by entrepreneurship. The state has placed an important position in encouraging innovation, entrepreneurship, and supporting innovation and entrepreneurship.

In addition, in recent years, in the talent market, the growth rate of college graduates has been far higher than the demand, and the employment situation of college students is increasingly grim. At present, our society is in the transition stage from information technology to intelligence. The economic take-off mode has changed, which provides more opportunities for talents in various fields. In this situation, more and more college students begin to take the road of independent entrepreneurship. Private college students are active in thinking, strong in practical ability, with certain technical skills and strong desire for entrepreneurship, so they are a special group suitable for entrepreneurship training. This paper collects 311 valid questionnaires and 62.2% effective rate through 500 questionnaires distributed to 4 private colleges and universities in Xi'an. Spss25.0 is used to analyze the data in order to provide practical basis for improving the entrepreneurial ability of private college students.

2. Indicators and data

This paper designs three categories of 34 indicators, which are competency indicators, psychological competency indicators and social competency indicators.

Table 1 Index system design table

Competency indicators	Psychological competence index	Social competency indicators
1. Have knowledge of operation and management	16. Be confident in yourself	28. Financing channels
2. Have common sense of law	17. Personal maturity	29. Available material conditions
3. Strategic decision-making ability	18. Down to earth	30. Extensive interpersonal network
4. Organizational planning ability	19. Keep calm	31. Good relationship with employees and customers
5. Problem solving ability	20. Actively adjust mentality	32. Care for social and economic development
6. Market holding ability	21. Resist other temptations	33. Cooperation with enterprises
7. Customer service capability	22. Optimistic and upward	34. Stable customer base
8. Learning ability	23. Full of hope	
9. Innovation spirit	24. Determination	
10. Social practice	25. Challenging and competitive	
11. Understand social rules	26. Decisive	
12. Social experience	27. Active	
13. Personal health		
14. Be able to bear hardships and stand hard work		
15. Teamwork ability		

The assignment of the index is from 1 to 5, which respectively represents the self-awareness level of the students in private colleges in terms of the ability and quality represented by the index, "very poor, poor, general, strong and strong".

3. An analysis of the overall characteristics of entrepreneurial ability indicators

3.1. Reliability Analysis

This research mainly uses the method of questionnaire to collect data. The questionnaire designed according to the purpose of the survey is a tool to obtain information by the method of questionnaire. Its quality plays a decisive role in the authenticity and applicability of the survey results. Due to environmental factors or personal factors of the interviewee, the results of the questionnaire may deviate from the real situation, resulting in inaccurate and inaccurate data. In order to ensure the reliability and validity of the questionnaire, it is necessary to carry out reliability and validity analysis on the surveyed data to judge the reliability of the data, so as to further carry out relevant data analysis.

Table 2 Reliability statistics

Clone Bach coefficient	Number of items
.971	34

It can be seen from the analysis results that the coefficient of clonbach is 0.971, which is close to 1, indicating that the index data obtained from the questionnaire survey has a high reliability and is suitable for further analysis.

3.2. Descriptive statistics

Table 3 Gender ratio of students interviewed

		Frequency	Percentage	Effective percentage	Cumulative percentage
Effective	Male	154	49.5	49.5	49.5
	Female	157	50.5	50.5	100.0
	Total	311	100.0	100.0	

Descriptive statistical results show that 154 boys, accounting for 49.5% of the total, 157 girls, accounting for 50.5% of the total.

Table 4 Professional status of students interviewed

		Frequency	Percentage	Effective percentage	Cumulative percentage
Effective	literature	32	10.3	10.3	10.3
	Neo Confucianism	96	30.9	30.9	41.2
	Engineering	76	24.4	24.4	65.6
	Medical Science	47	15.1	15.1	80.7
	Management Science	18	5.8	5.8	86.5
	Economics	19	6.1	6.1	92.6
	Education	7	2.3	2.3	94.9
	agronomy	5	1.6	1.6	96.5
	Other	11	3.5	3.5	100.0
	Total	311	100.0	100.0	

As can be seen from table 4, 32 students majored in Chinese Studies accounted for 10.3%. There are 96 students majoring in science, accounting for 30.9%. 76 students majored in engineering, accounting for 24.4%. The number of medical students was 47, accounting for 15.1%. There are 18 students majoring in management, accounting for 5.8%. There are 19 students in economics, accounting for 6.1%. There are 7 students in education, accounting for 2.3%. There are 5 students in agronomy, accounting for 1.6%. There are 11 students in other majors, accounting for 3.5%. From the perspective of professional distribution, this survey basically covers all majors, so the data is more representative.

4. Factor Analysis of Entrepreneurial Capability Indicators

We need to study the key factors affecting the entrepreneurial ability of college students from the aspects of competency competency indicators, psychological competency indicators and social competencies. Therefore, factor analysis is carried out for each of the three indicators.

4.1. Factor Analysis of Capability Trust Indicators

Table 5 Kmo and Bartlett test of ability trust

KMO sampling suitability quantity.		.935
Bartlett sphericity test	Last read card side	2496.093
	Freedom	105
	Saliency	.000

Kmo coefficient value is 0.935, more than 0.7, and the significance is 0, less than the critical test level of 0.05, indicating that the validity of competency index data is very good, which is suitable

for factor analysis.

Table 6 Factor load after rotation

	Factor 1	Factor 2
1. Have knowledge of operation and management	.693	
2. Have common sense of law	.568	
3. Strategic decision-making ability	.574	
4. Organizational planning ability		.579
5. Problem solving ability	.783	
6. Market holding ability		.766
7. Customer service capability	.525	
8. Learning ability		.694
9. Innovation spirit	.796	
10. Social practice		.825
11. Understand social rules	.544	
12. Social experience		.623
13. Personal health	.729	
14. Be able to bear hardships and stand hard work		.633
15. Teamwork ability	.529	.545

Table 7 Total variance interpretation table

Factor	Initial eigenvalue			Extract the sum of load squares			Sum of squares of rotating loads		
	Total	Variance percentage	Accumulate %	Total	Variance percentage	Accumulate %	Total	Variance percentage	Accumulate %
1	7.692	51.281	51.281	7.692	51.281	51.281	4.471	29.804	29.804
2	1.052	7.015	58.296	1.052	7.015	58.296	4.274	28.491	58.296
3	.855	5.701	63.997						
4	.793	5.289	69.286						
5	.639	4.259	73.545						
6	.577	3.846	77.391						
7	.481	3.207	80.599						
8	.470	3.134	83.732						
9	.432	2.882	86.615						
10	.417	2.783	89.398						
11	.387	2.582	91.979						
12	.352	2.346	94.326						
13	.336	2.239	96.565						
14	.283	1.885	98.450						
15	.233	1.550	100.000						

From the results of factor analysis, we can get two common factors, which explain 58.296% of the variation. Factor 1 includes A1(Knowledge of operation and management), A2(Have common sense of law), A3(Strategic decision making ability), A5(Problem solving ability), A7(Customer service capability), A9(Creative spirit), A11(Understanding social rules), A13(Personal health), A15(Teamwork ability), while factor 2 includes A4(Organizational planning capability), A6(Market holding ability), A8(learning ability), A10(social practice), A12(Social experience), A14(Be able to bear the hardship). Most of factor 1 contains entrepreneurial knowledge and entrepreneurial ability, which can be named as entrepreneurial foundation. Most of factor 2 contains entrepreneurial experience and entrepreneurial physical factors, which can be named entrepreneurial literacy.

4.2. Factor analysis of psychological competence

Table 8 KMO and Bartlett test of psychological trust

KMO sampling suitability quantity.		0.938
Bartlett sphericity test	Last read card side	2221.709
	Freedom	66
	Saliency	.000

The KMO coefficient value is 0.938, which is greater than 0.7, and the significance is 0, which is less than the critical test level of 0.05, indicating that the psychological competency index data is

very effective and suitable for factor analysis.

4.2.1. Factor load after rotation

Table 9 Rotation factor load matrix

	Factor 1	Factor 2
15. Be confident in yourself		.760
16. Personal maturity	.693	
17. Down to earth		.758
18. Keep calm	.796	
19. Actively adjust mentality		.799
20. Resist other temptations	.744	
21. Optimistic and upward		.695
22. Full of hope	.740	
23. Determination		.765
24. Challenging and competitive	.725	
25. Decisive		.574
26. Active	.648	

4.2.2. Total variance decomposition

Table 10 Total variance interpretation table

Factor	Initial eigenvalue			Extract the sum of load squares			Sum of squares of rotating loads		
	Total	Variance percentage	Accumulate %	Total	Variance percentage	Accumulate %	Total	Variance percentage	Accumulate %
1	6.843	57.027	57.027	6.843	57.027	57.027	3.906	32.547	32.547
2	1.055	7.960	64.987	1.055	7.960	64.987	3.893	32.440	64.987
3	.716	5.970	70.958						
4	.560	4.665	75.623						
5	.484	4.036	79.659						
6	.456	3.800	83.459						
7	.419	3.492	86.951						
8	.386	3.220	90.171						
9	.331	2.754	92.926						
10	.325	2.711	95.637						
11	.276	2.301	97.937						
12	.248	2.063	100.000						

From the results of factor analysis, we can get two factors, which explain 64.987% of the variation. Factor 1 includes P1(Be confident in yourself), P3(Down-to-earth), P5(Positive adjustment of mentality), P7(Optimistic upward), P9(Firm in of purpose), P11(Decisiveness). Factor 2 includes P2 (Personal maturity), P4 (Keep normal), P6 (Resist other temptations), P8 (Hopeful), P10 (Challenging and competitive), P12 (Action), factor 1 can be named psychological quality, factor 2 can be named compressive capacity.

4.2.3. Factor analysis of social competence

Table 11 KMO and Bartlett test of social competence index

KMO sampling suitability quantity.		.898
Bartlett sphericity test	Last read card side	980.518
	Freedom	21
	Saliency	.000

Kmo coefficient value is 0.898, more than 0.7, and the significance is 0, less than the critical test level of 0.05, indicating that the validity of social competency index data is very good, suitable for factor analysis.

4.2.4. Factor load of rotation

Table 12 Rotation factor load matrix

	Factor 1	Factor 2
28. Financing channels	.736	
29. Available material conditions		.814
30. Extensive interpersonal network	.848	
31. Good relationship with employees and customers		.842
32. Care for social and economic development	.763	
33. Cooperation with enterprises		.573
34. Stable customer base	.719	

4.2.5. Total variance decomposition

Table 13 Total variance interpretation table

Factor	Initial eigenvalue			Extract the sum of load squares			Sum of squares of rotating loads		
	Total	Variance percentage	Accumulate %	Total	Variance percentage	Accumulate %	Total	Variance percentage	Accumulate %
1	4.113	58.762	58.762	4.113	58.762	58.762	2.724	38.915	38.915
2	1.030	10.425	69.187	1.030	10.425	69.187	2.119	30.273	69.187
3	.589	8.417	77.604						
4	.441	6.305	83.909						
5	.417	5.954	89.863						
6	.360	5.136	94.999						
7	.350	5.001	100.000						

From the results of factor analysis, we can get two factors, which explain 69.187% of the variation. Factor 1 includes S1 (Financing channels), S3 (Extensive interpersonal networks), S5 (Care for social and economic development), S7 (Stable customer base). Factor 1 can be named as social background, factor 2 includes S2 (Available material conditions), S4 (Good relationship with employees and customers), S6 (Cooperation with enterprises), and factor 2 can be named as social resources.

5. The relationship between entrepreneurial behavior and its influencing factors

Among the students interviewed, there are quite a few students who have ever had entrepreneurial experience. Is there any obvious relationship between entrepreneurial experience and the influencing factors we analyzed above? In order to answer this question, binary logical regression analysis was carried out based on whether there were entrepreneurial experiences as the dependent variables, and the entrepreneurial foundation, entrepreneurial literacy, psychological quality, stress resistance, social background, and social resources obtained by factor analysis were independent variables.

Table 14 The logistic regression results of entrepreneurial behavior and its influencing factors

		B	S.E.	Wald	Freedom	Saliency	Exp(B)
	Entrepreneurial Foundation	.184	.220	.705	1	.401	1.202
	Entrepreneurial literacy	.532	.223	5.678	1	.017	1.702
	Psychological quality	.151	.277	.297	1	.586	.860
	Compressive capacity	.235	.274	0.737	1	.391	.790
	social context	.225	.254	4.784	1	.021	1.252
	social resources	.313	.236	3.227	1	.024	1.119
	Constant	-.662	.125	28.278	1	.000	.516

From the results of binary logistic regression analysis, the saliency values of the regression coefficient estimates of entrepreneurial foundation, psychological quality, and stress resistance are 0.401, 0.586, and 0.391, respectively, which are greater than the critical significance test level of

0.025. It is shown that their regression coefficient estimates fail to pass the significance test. The saliency values of the regression coefficient estimates of entrepreneurial literacy, social background, and social resources are 0.017, 0.021, and 0.024, respectively, which are less than the critical significance test level of 0.025. The regression coefficient estimates of the three explanatory variables of entrepreneurial literacy, social background and social resources are tested by significance. This means that entrepreneurial experience is significantly influenced by entrepreneurial literacy, social background and social resources. From the positive and negative regression coefficient estimates, the regression coefficient estimates of entrepreneurial literacy, social background and social resources are all positive, indicating that these three factors have a positive impact on entrepreneurial behavior. From their size, we can see that the regression coefficient of entrepreneurial literacy is the largest, followed by the regression coefficient of social resources. The regression coefficient of social background has the smallest estimated value, and the size of the value represents the weight to some extent, which shows that among the three factors that affect entrepreneurial behavior, entrepreneurial literacy plays the largest role.

6. Conclusions and recommendations

Based on the results of empirical analysis, it is found that entrepreneurial ability is significantly affected by entrepreneurial literacy, social background and social resources. Through factor analysis, we know that entrepreneurial literacy includes A4 (Organizational planning capability), A6 (Market holding ability), A8 (learning ability), A10 (Social Practice), A12 (social experience), A14 (hard-working). The social background includes S1 (funding channels), S3 (wide network of people), S5 (concerned about social and economic development), and S7 (with stable customer groups). Including S2 (there are available material conditions), S4 (good relationship with employees, customers), S6 (cooperative with the company), the indicators contained in these three factors. It is not difficult to see that the importance of practical teaching in improving the entrepreneurial ability of private college students is basically in the process of entrepreneurial planning, integration of entrepreneurial resources and the implementation of entrepreneurial organizations [1]. Since the empirical analysis process reveals that accurate practical teaching activities have such an important role in improving the entrepreneurial ability of private college students, how to implement teaching?

6.1. First of all, we should fully understand the characteristics of students in private colleges and accurately establish the training objectives.

Compared with public college students, private college students have the characteristics of active thinking, strong practical ability, entrepreneurial impulse, courage to try, strong pressure resistance, strong adaptability and so on. Compared with theoretical learning, they need practical teaching more urgently to bring them direct entrepreneurial skills and abilities, and achieve the purpose of learning for application.

6.2. Rational use of school resources to carry out semi-enterprise and semi-teaching activities in the school

The school itself is a relatively large entrepreneurial market. The students' eating, drinking and living are basically on campus and suitable for entrepreneurial activities. Schools can actively encourage students to start a business within the school without affecting teaching activities, or practice activities by means of school-led and student participation [2]. On the one hand, it helps to transform the theoretical knowledge that students have learned into practical ability, and can also exercise their entrepreneurial ability in all aspects; on the other hand, it can also help schools solve the problem of insufficient teaching funds.

6.3. Actively introduce enterprises outside the school and carry out the mode of joint training between the school and the enterprise

At present, the country is vigorously promoting the strategic concept of urban development and rural revitalization, which requires a large number of talents with practical ability. There are a large number of vacancies in primary talents in e-commerce, logistics, 5g network infrastructure construction, intelligent life, intelligent transportation, driverless and other fields [3]. These are the goals of talent training in private colleges and universities. Private colleges and universities can cooperate with well-known enterprises in related fields to jointly train students in the school, and actively carry out targeted practical teaching, which can quickly and effectively achieve the goal of win-win for both the school and the students.

To improve the entrepreneurial ability of private college students, there is no fixed model to go. Only by keeping up with the overall situation of national development, constantly exploring, grasping the main thread of the society's demand for talents, and actively practicing, can we achieve targeted training in talent cultivation. Adding useful talents to the country and society, highlighting the mission and social value of private colleges and universities.

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