Research on Influencing Factors and Strategies of Agricultural College Students Returning to Their Hometowns to Help Rural Revitalization Based on Big Data Computational Analysis in the Perspective of Entrepreneurial Ecosystems

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Abstract The return of agriculture-related college students to their hometowns for entrepreneurship is not only conducive to improving agricultural productivity and driving farmers to increase production and income, but also a powerful driving force for rural revitalization. This paper takes the willingness of agriculture-related college students to return to their hometowns to start their own businesses as an entry point, combines relevant theories, and constructs a theoretical model of the factors influencing the willingness of agriculture-related college students to return to their hometowns to start their own businesses. Within the framework of the theoretical model, this paper designs a questionnaire on the willingness of agriculture-related college students to return to their hometowns to start their own businesses, taking previous studies as a reference. At the same time, in order to accurately analyze the influencing factors of agriculture-related college students' willingness to return to their hometowns to start their own businesses, the grey correlation model and the logit regression model are discussed in detail, and the two are combined to form an analytical model of the influencing factors of entrepreneurial willingness. In the empirical analysis of the questionnaire, the regression coefficients of entrepreneurial willingness and entrepreneurial ability indexes are as high as 9.059 and 4.081, indicating that entrepreneurial willingness and entrepreneurial ability indexes are not only the key factors influencing the willingness of college students in agriculture-related majors to return to their hometowns to start their own business but also have a significant positive influence on college students' return to their hometowns to start their own business.

Index Terms rural revitalization, gray correlation model, logit regression model, willingness to return home to start a business

I. Introduction

In recent years, the employment situation of college students is grim, and many college graduates have difficulties in employment in the city. And the outstanding contradiction of employment of college students in agriculture-related majors makes the lack of rural talent and urban employment pressure increasing [1]-[4]. The introduction of idle talents into the formation of human resources gap in the countryside to go, encourage agriculture-related college students to return to their hometowns to start their own businesses, the use of their own professional knowledge to help folks get rich, the development of the agricultural industry, and to promote the economic development of the county and townships [5]-[8]. Not only can the progress of modern agriculture to create intelligence and talent base, but also can effectively deal with the current employment difficulties of college graduates [9]-[11].

The revitalization of agriculture is the foundation of peace and security. Industrial revitalization is the material foundation of rural revitalization, only industrial prosperity and economic development can continuously improve the income of farmers, stimulate the vitality of the countryside, and achieve the goal of living a rich life [12]-[15]. Rural revitalization can not be separated from the support of talents, agriculture-related college students are professionals in the field of agriculture, they not only master the basic knowledge of agriculture, but also have the basic skills of agriculture, compared with ordinary college students have the unique advantage of developing rural industries, the rural areas belong to the valuable and urgently needed human resources [16]-[19]. However, the willingness of college students majoring in agriculture to return to their hometowns to start their own businesses will be affected by their personal pursuits, academic qualifications, social realities, the strength of national policy support, and the school and other factors [20]-[22]. Therefore, the society should cultivate college students' entrepreneurial awareness and entrepreneurial enthusiasm, encourage college students to participate in the wave

of returning to their hometowns to start their own businesses, and give entrepreneurs more financial and human resources support [23]-[25]. While guaranteeing the financial security of entrepreneurs, the families of entrepreneurs should also support the entrepreneurial work of college students to form a favorable entrepreneurial atmosphere and entrepreneurial environment in the society [26]-[28].

This paper establishes a theoretical model of the influencing factors on the willingness of college students to return to their hometowns by combining with the relevant research on the influencing factors on the willingness of college students to return to their hometowns to start their own businesses. The theoretical model is used as a framework to design a questionnaire on the influencing factors of the willingness of agriculture-related college students to return to their hometowns to start their own businesses. A total of 1,200 college students majoring in agriculture were selected as the research samples in a city university to describe the characteristics of the samples. At the same time, the gray correlation method and logit regression analysis method are chosen as the empirical analysis methods to construct the analysis model of factors influencing entrepreneurial willingness. Using this model, the validation and analysis of the influencing factors of the willingness of agriculture-related college students to return to their hometowns to start their own businesses are carried out.

II. Impact of relevant theories on entrepreneurial intentions

In this chapter, by combining the "push-pull" theory, the hierarchy of needs theory, the achievement needs theory, the social support theory, the relationship between entrepreneurial willingness from the internal and external direction is shown in Figure 1, which provides theoretical support for the subsequent design of factors affecting entrepreneurial willingness.
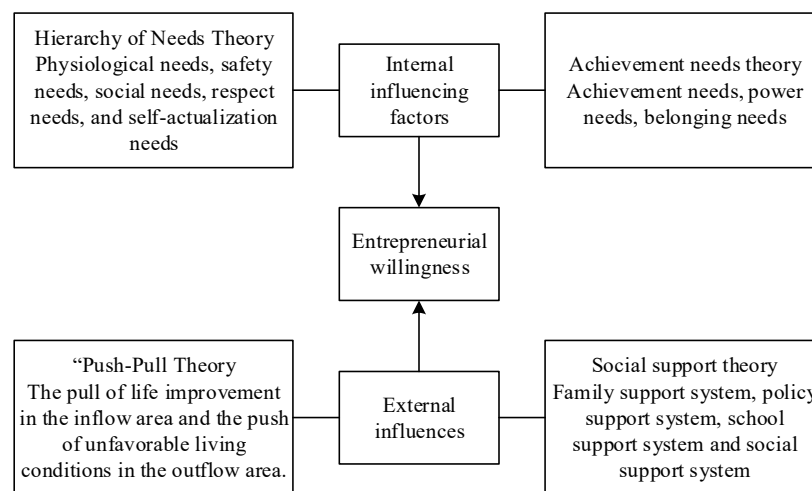

Figure 1: The influence of relevant theories on entrepreneurial intention

Through the analysis of Hierarchy of Needs Theory and Achievement Needs Theory, people's needs are different, and entrepreneurial willingness belongs to high-level needs. The willingness of agriculture-related college students to return to their hometowns for entrepreneurship should consider the aspect of college students' personal need motivation, and should set the indicators of entrepreneurial motivation and entrepreneurial ability, focusing on the high achievement needs. According to the idea of social support theory, it should pay attention to personal resources and social resources, and set up corresponding influencing factors from the aspects of family, school, government and society.

To summarize, this paper combines the previous research theories and opinions, and proposes the theoretical model of the influence factors on the willingness of college students majoring in agriculture to return to their hometowns to start their own businesses, which is shown in Fig. 2.
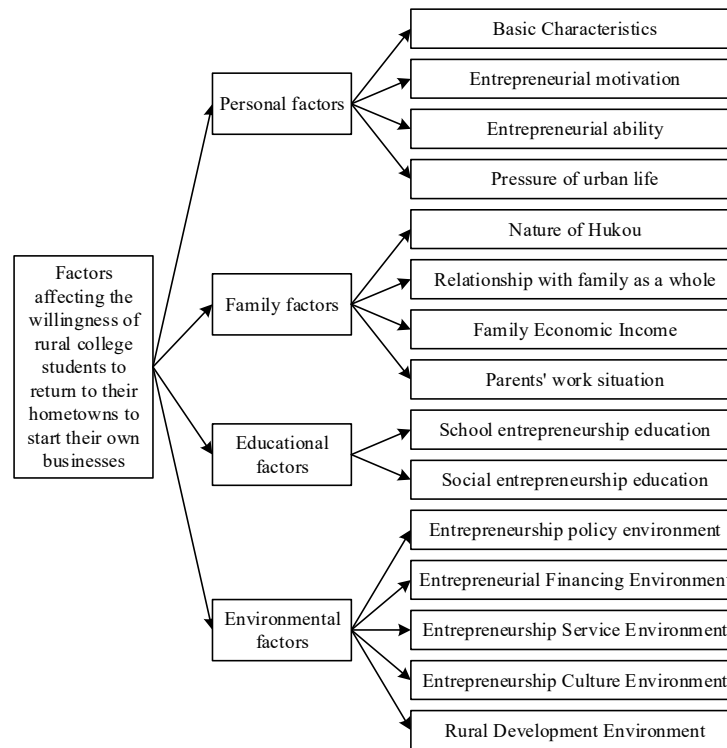
Figure 2: Theoretical model of influencing factors of entrepreneurial willingness

III. Research design on the willingness of university students to return to their hometowns to start their own businesses

On the basis of the theoretical model presented in Chapter 2, this chapter designs a questionnaire on the factors influencing the willingness to return home to start a business with reference to previous studies. The sample characteristics and data sources of this questionnaire are described.

III. A. Questionnaire design

Questionnaire is an important tool for social science research, and whether the questionnaire is scientific or not directly affects the accuracy and reliability of the findings. Before designing the questionnaire, this paper consults a large number of related literature on rural population returning to their hometowns, entrepreneurial willingness, and college students' willingness to return to their hometowns to start their own businesses. Combined with the object of this study: college students majoring in agriculture in a city college, the survey is mainly carried out from four aspects of the willingness of college students majoring in agriculture to go back to their hometowns to start their own businesses, personal influencing factors, family influencing factors, educational influencing factors and environmental influencing factors, and is combined with the theoretical guidance of the "Push-Pull" theory, Maslow's hierarchy of needs theory, McClelland's achievement needs theory and the social support theory. Combined with the theoretical guidance of "push-pull" theory, Maslow's hierarchy of needs theory, McClelland's achievement needs theory and social support theory, the study summarizes and summarizes the research results related to the entrepreneurship of college students returning to their hometowns, and determines the relevant issues that influence the factors of the willingness of college students majoring in agriculture to return to their hometowns to start a business. This study measures the willingness of agriculture-related college students to return to their hometowns to start their own businesses by means of a single-choice questionnaire, which directly asks "Are you considering returning to your hometown to start your own business". The questionnaire, except for the part of basic personal information, was scored on a five-point Likert scale, which was filled out according to five levels of scores: very important (1 point), more important (2 points), general (3 points), unimportant (4 points), and very unimportant (5 points).

The specific structure and survey content of the questionnaire are mainly divided into the following five aspects:

(1) Agriculture-related college students (A) basic personal information: (A1) entrepreneurial willingness, (A2) gender, (A3) academic qualifications, (A4) type of university, (A5) university grade. The purpose of this part of the survey is to grasp the overall profile of the city's agriculture-related college students, and the specific survey

content of the basic personal information is shown in Table 1.

Table 1: Rural college students' personal basic information

Variable	Measurement item
Personal basic information	Are you considering returning home to start a business
	What is your gender
	What is your education background
	What kind of university are you currently studying in
	What year are you in

(2) The (B) personal factors influencing agriculture-related college students to return to their hometowns to start their own businesses: (B1) basic characteristics, (B2) entrepreneurial motivation, (B3) entrepreneurial ability, (B4) rural sentiment, and (B5) the pressure of urban life. The content of this part of the questionnaire is mainly to understand the understanding of agriculture-related college students on entrepreneurship and the cognitive sense of the difficulty of realizing entrepreneurship, and the specific survey content of personal factors is shown in Table 2.

Table 2: Personal factors affecting college students returning home to start business

Variable	Measurement item
Essential feature	sex factors
	Family finances
	Major
	Personal character
Entrepreneurial motivation	Individual social resources
	Have entrepreneurial dreams
	Have an adventurous spirit
	Have a strong motivation to achieve
	Have entrepreneurial passion
Entrepreneurial ability	Have the ability of innovation and entrepreneurship
	Have market insight
	Good communication and coordination skills
	Have the ability to lead
	Have the ability to resist frustration
Rural feelings, urban life pressure	Be nostalgic for one's hometown
	Love rural life
	have full confidence in rural development
	want to stay with my parents
	Urban employment pressure is great
	Urban consumption level is high

(3) The (C) family factors affecting agriculture-related college students returning to their hometowns to start their own businesses: (C1) the nature of hukou, (C2) the overall relationship with family members, (C3) the family's economic income, and (C4) parents' work situation. The content of this part of the questionnaire is mainly to understand the degree of influence of family factors on the return of college students majoring in agriculture to their hometowns to start their own businesses, and the specific survey content of family factors is shown in Table 3.

Table 3: Family factors affecting college students returning home to start businesses

Variable	Measurement item
Household registration type	Whether the hukou is in the countryside
Overall relationship with family	Family support for entrepreneurship
	Whether the overall relationship with the family is harmonious
Family economic income	Family economic income level
Parents' work status	Family members have entrepreneurial experience

	Parents work in the countryside

(4) The (D) educational factors affecting the entrepreneurship of agriculture-related college students returning to their hometowns: (D1) school entrepreneurship education, (D2) social entrepreneurship education. The content of this part of the questionnaire is mainly to understand the degree of influence of entrepreneurship education factors on the return of agriculture-related college students to their hometowns to start their own businesses, and the specific survey content of education factors is shown in Table 4.

Table 4: Educational factors affecting students returning home to start businesses

Variable	Measurement item
School entrepreneurship education	Schools attach importance to innovation and entrepreneurship education
	School innovation and entrepreneurship competition or practice
	School innovation and entrepreneurship guidance services
	Are there any courses in marketing, management, human resource management, financial accounting, etc.
Social entrepreneurship education	The social Entrepreneurship Incubator provides entrepreneurship training
	College students back home entrepreneurship advanced typical propaganda

(5) The (E) environmental factors affecting the entrepreneurship of agriculture-related college students returning to their hometowns: (E1) entrepreneurial policy environment, (E2) entrepreneurial financing environment, (E3) entrepreneurial service environment, (E4) entrepreneurial culture environment, and (E5) rural development environment. The content of this part of the questionnaire is mainly to understand the degree of influence of environmental factors on the return of agriculture-related college students to their hometowns for entrepreneurship, and the specific survey content of environmental factors is shown in Table 5.

Table 5: Environmental factors affecting students returning home to start businesses

Variable	Measurement item
Entrepreneurship policy environment	Impact of rural revitalization strategy
	The influence of the construction of beautiful countryside
	The influence of the state to encourage college students to start their own businesses
Venture financing environment	Government support for entrepreneurial enterprises
	Government support for venture capital
	Financial institutions support start-up loans
	Financial support from social venture capital institutions
Entrepreneurship service environment	Business advisory services
	The service level of the relevant government departments for the handling of entrepreneurial procedures
	College students return home entrepreneurship exchange service platform
Entrepreneurial culture environment	Leading the entrepreneurial spirit of the whole society
	Social tolerance and understanding of entrepreneurial failure
	Public opinion encouraging college students to return home to start their own businesses
Rural development environment	The overall entrepreneurial culture atmosphere in the countryside
	The level of rural infrastructure (transportation, communication, Internet, etc.)
	Rural economic development level
	Rural key products or characteristic industries
	Social security in rural areas
	The convenience of rural life

III. B. Sample selection

This study adopts the questionnaire survey method, through a typical sampling survey, the survey sample is mainly from a city college and university students majoring in agriculture. According to the city's eight colleges and universities, each college and university randomly selected 150 college students majoring in agriculture to conduct the survey, as far as possible to ensure that the sample selection has a real degree of credibility, and at the same time, the research of some of the school after graduation to return to their hometowns to start their own business

success in the agriculture-related graduates. At the same time, to ensure the breadth of the sample selection, the survey also included more than two years after graduation and within two years of graduation and intend to return to their hometowns to start their own businesses or have already started their own businesses at home in the agriculture-related majors of college students. The selection of survey respondents is mainly due to two considerations: first, a large number of studies show that the node of whether college students return to their hometowns to develop in the city or stay in the countryside to start their own businesses is the period of two years after graduation. Secondly, the favorable policies formulated and implemented by the government can strengthen the willingness of college graduates to return to their hometowns to start their own businesses, and the confidence of those who have already decided to start their own businesses in their hometowns has become even stronger.

III. C. Data sources

This paper combines online and offline questionnaires to carry out the survey, in which online questionnaires are distributed through the channel of "Questionnaire Star", and offline paper questionnaires are distributed on site to carry out the survey. In addition, this paper also uses the field survey method and interview method in the research, and the interview subjects are the college students who have returned to their hometowns, so as to obtain more first-hand information. A total of 350 paper questionnaires were distributed in this survey, 332 valid questionnaires were returned, 850 questionnaires were distributed through online channels, and 826 valid questionnaires were returned in the end. We got 1,158 valid questionnaires and the validity rate of the questionnaires was 96.50%.

III. D. Descriptive statistical analysis of the sample

The initial summary and analysis of the data collected from the questionnaire revealed that 52.5% of the respondents were (GM) male and 47.5% were (GF) female. 30.1% of the respondents were (OO) only children and 69.9% of the respondents were (ON) non-only children. In addition, 68.92% of the respondents were (GN) non-current students, 21.91% of the respondents were (GR) recent graduates, 7.17% of the respondents were (GL) graduated within 2 years, and 2% of the respondents were (GM) graduated for more than 2 years. In terms of subject majors, 35.65%, 29.01%, and 27.54% of the respondents were from (ML) liberal arts, (MS) science, and (ME) engineering, respectively, and 7.8% were from other majors such as (MO) arts. Figure 3 shows the specific survey.
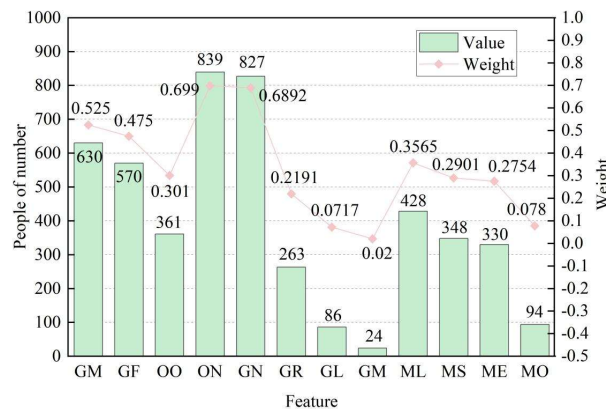

Figure 3: Summary of the classification of the questionnaire data

IV. Analytical model of factors influencing entrepreneurial intentions

IV. A. Gray correlation model

Gray theory refers to the field where data is missing and information is poor between black and white systems. The gray correlation analysis method, which is born in gray theory, has the advantages of loose data requirements, small computation and reliable results, and has been widely used in social, economic, agricultural, ecological and other fields. After decades of research by scholars, the gray correlation model is getting richer and richer, and the real problems that can be solved are getting wider and wider. In reality, the employment and entrepreneurship of college students returning to their hometowns is affected by a variety of factors and the relationship is complex, which can not be analyzed by a simple definition, in line with the characteristics of the gray system. Considering the research object of this paper, and the actual data samples that can be obtained, this paper firstly chooses the method of gray correlation analysis to explore the importance of different factors on the employment and entrepreneurship of college students returning to their hometowns. The specific calculation steps are as follows:

Gray correlation method takes the willingness of college students to return home for employment and entrepreneurship as the parent series $x_0(t)$, and each influence factor as the subsequence $x_i(t)$. $x_0(t)$ and $x_i(t)$ are firstly dimensionless, and their absolute difference at the moment of t is recorded as equation (1):

$$D_{0i}(t) = \left| x_0(t) - x_i(t) \right|$$
(1)

Next find the two-level difference as in equations (2) and (3):

$$D_{max} = \max_i{}^{max} D_{0i}(t)$$
(2)

$$D_{min} = \min_i{}^{min} D_{0i}(t)$$
(3)

Find the correlation coefficient as in equation (4):

$$g_{0i}(t) = \frac{D_{min} + ¥ D_{max}}{D_{0i}(t) + N D_{max}}$$
(4)

À is the discrimination coefficient, which is generally taken as 0.5 and substituted into the calculation.
Solve the correlation value as in equation (5):

$$g_{0i} = \frac{1}{n} \overset{n}{\underset{t=1}{\mathring{a}}} g_{0i}(t)$$
(5)

The higher the correlation, the better the evaluation results and the closer the drivers, i.e. the more important the drivers.

IV. B. logit regression model

Through the gray correlation analysis of the questionnaire data, the factors that have an important influence on college students' willingness to return home for employment and entrepreneurship are derived, but it has not yet been revealed whether these factors can really play a role, so this paper applies the logistic regression model to verify the important influencing factors derived from the gray correlation analysis. According to the purpose of this paper, the willingness of college students to return to their hometowns for employment and entrepreneurship is set as the dependent variable, and the important influencing factors derived from the gray correlation analysis are taken as the independent variables, and binary logistic regression analysis is used to explain the mechanism of the dependent variable and the independent variables. According to the needs of analysis, the dependent variable is whether college students are willing to return to their hometowns for employment and entrepreneurship, and willingness to return to their hometowns for employment and entrepreneurship is defined as 1, and unwillingness to return to their hometowns for employment and entrepreneurship is defined as 0. The specific model is shown in equations (6) and (7):

$$\ln\left[\frac{p(y = 1)}{1 - p(y = 1)}\right] = a + \overset{k}{\underset{i=1}{\mathring{a}}} b_i x_i$$
(6)

$$p(y = 1 \mid x) = \frac{e^{a + \overset{k}{\underset{i=1}{\mathring{a}} b_i x_i}}}{1 + e^{a + \overset{k}{\underset{i=1}{\mathring{a}} b_i x_i}}}$$
(7)

In (6) and (7), it indicates the i st explanatory variable affecting college students' willingness to return to their hometowns for employment and entrepreneurship, k is the number of explanatory variables, a is the intercept term, and b_i is the coefficient of the explanatory variable x_i, reflecting the direction and degree of the variable's influence on college students' willingness to return to their hometowns for employment and entrepreneurship, which is usually obtained by maximum likelihood estimation. The ratio of the probability of college students' unwillingness to return to their hometowns to the probability of their willingness to return to their hometowns is the event occurrence ratio, which is used to explain the regression coefficients of the logistic regression model. When the regression coefficient $\exp(B)$ is positive, it means that the odds of the event occurring increase relative to the reference group. If the regression coefficient is negative, it implies a decrease in the odds of the event occurring.

V. Empirical analysis of the questionnaire

For the validity test of the questionnaire, this chapter uses the analytical model of factors influencing entrepreneurial intentions to successively analyze the gray correlation between the dimensions of primary and secondary indicators. The construct validity of the questionnaire questions is analyzed using the KMO method and the Barthes sphere method, while the questionnaire data are analyzed descriptively. On the premise of the above analytical work, the empirical analysis of the influence factors of the willingness of college students majoring in agriculture to return to their hometowns to start their own businesses was carried out.

V. A. Gray correlation analysis of indicators

V. A. 1) Tier 1 indicator dimensions

In this paper, the selected five aspects of the first-level indicators as a sub-sequence, with college students' willingness to return to their hometowns to start their own businesses as the parent sequence, using the model of this paper to conduct a gray correlation analysis, gray correlation analysis is a multifactorial evaluation method for determining the degree of influence of each factor on the object of the study, and Fig. 4 shows the grey correlation results of the first-level indicators.

From the results, it can be seen that the importance of the five first-level indicators on the influence of college students' return to their hometowns to start their own businesses is, in order of importance, (B) personal factors, (A) basic personal characteristics, (C) family factors, (D) educational factors and (E) environmental factors. Among them, (B) personal factors have the highest correlation of 0.6279. This factor dimension includes basic characteristics, entrepreneurial motivation, entrepreneurial ability, rural sentiment, and the pressure of urban life, because they are directly related to the individual's identity, entrepreneurial strength, and economic foundation, and these factors play an important role in the decision-making process, shaping the individual's attitudes and choices about employment and entrepreneurship. Moreover, they have a high degree of objectivity and stability, directly determine the individual's decision-making basis and constraints, and are also influenced by long-term social culture and family education, so they have a more far-reaching and long-lasting impact on individual behavior and choices. The correlation of the four dimensions of the other factors does not differ much, but all of them have a greater impact on college students' return to their hometowns to start their own businesses.
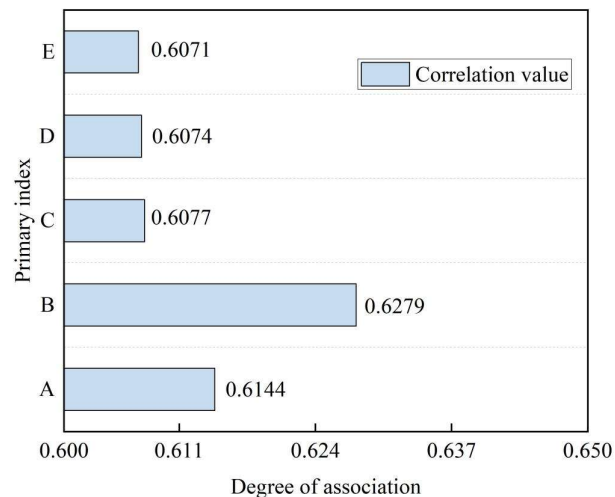

Figure 4: Grey correlation degree and rank of primary index

V. A. 2) Secondary indicator dimensions

The above gray correlation analysis of the first-level influencing factor indicators affecting college students' entrepreneurship in their hometowns was carried out, and although it has certain research significance, it lacks comparative significance due to the small difference between the correlation degrees. Therefore, in order to study the specific differences in the degree of influence of each influencing factor on college students' entrepreneurship in their hometowns, this paper further conducts gray correlation analysis with 21 secondary indicators as the sub-sequence, and college students' willingness to return to their hometowns to start their own businesses as the parent sequence, and the results are shown in Table 6.From the viewpoint of the secondary indicators, the top-ranking indicators are entrepreneurial willingness, entrepreneurial ability, nature of household registration and entrepreneurial motive. The rest of the top ten indicators are overall relationship with family, basic characteristics, urban life pressure, family economic income, entrepreneurial policy environment and rural development

environment.

Table 6: Grey correlation degree and rank of secondary index

Evaluation item	Degree of association	Ranking
A1	0.915	1
B3	0.913	2
C1	0.812	3
B2	0.781	4
C2	0.754	5
B1	0.688	6
B5	0.673	7
C3	0.668	8
E1	0.666	9
E5	0.664	10
A3	0.654	11
D1	0.661	12
A2	0.649	13
E4	0.641	14
C4	0.641	15
B4	0.633	16
E3	0.629	17
A4	0.607	18
E2	0.572	19
D2	0.568	20
A5	0.567	21

V. B. Validity analysis of the questionnaire

Validity is used to evaluate the correctness of the design of the questionnaire, as well as the truthfulness and validity of the data obtained. The construct validity of each questionnaire topic was investigated using exploratory factor analysis. For the feasibility of factor analysis, KMO method and Bartlett's sphere method are generally used in academia. Generally, the significance level of Bartlett's spherical test is below 0.5 and the KMO value is above 0.5.

The results of the KMO method and Bartlett sphericity test of the questionnaire are shown in Table 7. As can be seen from Table 7, the KMO value = 0.694 (>0.6), which is between 0.6 and 0.7, and the Bartlett sphericity test shows the approximate chi-square value = 1283.509 (>800), which corresponds to the P value = 0.000 (<0.05). It indicates that the questionnaire data meets the prerequisite requirements for factor analysis and can be used to continue doing factor analysis research.

Table 7: Results of the KMO and Bartlett test

KMO Value	Bartlett sphericity test		
	Approximate chi-square	Df	P Value
0.694	1283.509	106	0.000

In this paper, the maximum variance orthogonal rotation applied to mutually independent factors or components is used, and the rotation operation aims to simplify the factor structure, and analyze the degree of inter-correlation between each factor and the original indexes through the rotated factor loading values. The initial eigenvalues are shown in Table 8, and the total results of extracted loadings squared and rotated loadings squared are shown in Table 9. 5 factors are extracted, whose eigenvalues are all greater than 1, and the variance explained after rotation is 10.592%, 10.528%, 9.515%, 9.243%, and 8.583%, respectively, and the cumulative variance explained after rotation is 48.641%.

Table 8: Initial eigenvalue

Index	Initial eigenvalue		
	Total	Variance percentage	accumulate
A1	3.266	10.592	10.592
B3	3.068	10.528	21.12
C1	3.06	9.515	30.635
B2	2.932	9.243	39.878
C2	2.801	8.583	48.461
B1	2.733	8.32	56.781
B5	2.7	6.402	63.183
C3	2.61	5.389	68.572
E1	2.505	5.136	73.708
E5	2.407	3.238	76.946
A3	2.247	3.076	80.022
D1	2.118	2.971	82.993
A2	1.616	2.639	85.632
E4	1.478	2.629	88.261
C4	1.319	2.59	90.851
B4	1.269	2.541	93.392
E3	0.915	1.923	95.315
A4	0.898	1.51	96.825
E2	0.691	1.302	98.127
D2	0.485	1.245	99.372
A5	0.342	0.628	100

Table 9: Extract the sum of squares of load and the sum of squares of rotating load

Index	Extract the sum of squared loads			Total sum of squares of rotating loads
	Total	Variance percentage	accumulate	
A1	3.266	10.592	10.592	2.024
B3	3.068	10.528	21.12	1.875
C1	3.06	9.515	30.635	1.698
B2	2.932	9.243	39.878	1.576
C2	2.801	8.583	48.461	1.511

Table 10 shows the rotated component matrix. For the sake of observation, it is forbidden to show the values with loading values lower than 0.5 in the table. The original 21 indicators of information are concentrated into five public factors, to obtain the factor loading matrix of orthogonal rotation with the largest variance as shown in the table. Among them, the indicator that can reflect the degree of correlation between the factor and each variable is the factor loading coefficient, and the absolute value of the size of the factor represents that the factor has a positive correlation effect with the current variable. In factor 1, "entrepreneurial intention" and "educational background" have a large load coefficient, which reflects the basic personal information factors that affect college students returning to their hometowns to start their own businesses, so factor 1 is named "personal basic factors".

Table 10: Composition matrix after rotation

	1	2	3	4	5
A1	0.867				
A2	0.648				
A3	0.736				
A4	0.625				
A5	0.669				
B1		0.556			
B2		0.849			
B3		0.877			

B4		0.541		
B5		0.763		
C1			0.704	
C2			0.811	
C3			0.678	
C4			0.589	
D1				0.758
D2				0.503
E1					0.806
E2					0.623
E3					0.671
E4					0.489
E5					0.811

In factor 2, "entrepreneurial motivation", "entrepreneurial ability" and "urban life pressure" have large load coefficients, which reflect the ability of entrepreneurship itself, so factor 2 is named "the influencing factor of personal ability on entrepreneurship". In factor 3, "overall relationship with family members", "nature of household registration" and "overall relationship with family members" have large load coefficients, which reflect the family support factors that affect college students returning to their hometowns to start businesses, and are named "family factors". In factor 4, "school entrepreneurship education" has a large load factor, which reflects the school's entrepreneurship education for students, so factor 4 is named "education factor". In factor 5, "rural development environment" and "entrepreneurship policy environment" have large load coefficients, which reflect the suitability of the local rural environment for college students returning to their hometowns to start businesses, so factor 5 is named "environmental factors".

According to the results of factor analysis, the main factors influencing the return of college students majoring in agriculture to their hometowns and entrepreneurship are as follows: personal basic factors, influencing factors of personal ability on entrepreneurship, family factors, education factors, and entrepreneurial environment factors. The basic information of the respondents, such as "gender", "age", "education", "major", and "whether they are an only child", can be used as control variables for "personal characteristics factors". There was little difference from the initial classification of variables, indicating that the validity of the questionnaire design was good.

V. C. Analysis of descriptive results

The results of descriptive statistics were analyzed through the use of SPSS 19.0 against the statistical data, and the specific results of the analysis are shown in Figure 5.
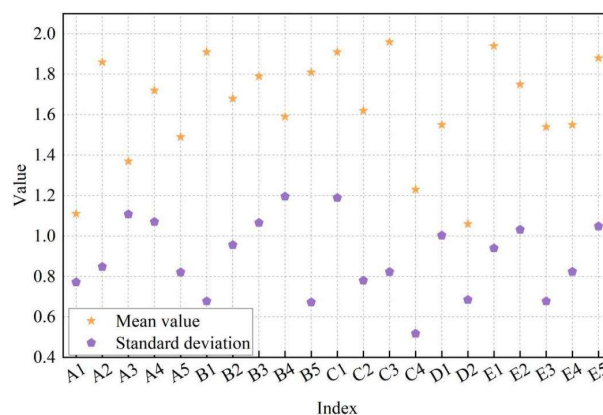

Figure 5: Results of descriptive statistical analysis of variables

Observing Figure 5, it can be seen that, combined with the content of the assignment, the overall survey willingness among 1200 college students is relatively strong, with a mean value above 1. Among the variables with higher mean values are entrepreneurial willingness, entrepreneurial motivation, entrepreneurial ability, nature of household registration, family economic income, student entrepreneurship education, entrepreneurship policy environment, with mean values above 2. Therefore, it can be focused on in the process of empirical analysis below.

V. D. Empirical Analysis of Impact Factors

Set whether the college students majoring in agriculture have the intention of returning to their hometowns to start their own businesses as an explanatory variable, and use the model of this paper to carry out binary Logit regression analysis, and the results of the analysis are shown in Table 11.

Table 11: Results of binary Logit regression analysis

Index	Regression coefficient	Standard error	z Value	Waldx2	p value	OR Value
A1	9.059**	2.871	4.188	40.5891	0.002	8586.00
A2	-0.671	2.203	-0.086	8.942	0.137	13.554
A3	0.113	4.094	3.692	4.136	0.092	5.746
A4	-10.516	3.504	-3.564	3.524	0.371	12.99
A5	-20.285	5.163	-5.64	20.99	0.206	1.941
B1	2.456	2.009	4.338	3.828	0.007	0.829
B2	2.779**	3.077	3.034	9.877	0.000	5.725
B3	4.081**	0.794	1.776	7.874	0.000	59.163
B4	2.506	4.431	5.378	2.652	0.118	14.26
B5	-2.671	0.545	-1.543	9.668	0.349	17.897
C1	3.861**	4.802	5.056	2.908	0.000	13.721
C2	-0.374	0.602	-0.972	8.143	0.469	19.417
C3	2.062**	0.271	5.607	7.076	0.003	6.413
C4	1.046	2.456	1.004	1.04	0.046	2.235
D1	0.852	3.171	5.482	0.139	0.005	19.682
D2	-15.874	4.371	-3.406	3.819	0.197	7.507
E1	3.109*	2.142	5.655	2.12	0.007	7.464
E2	-14.987	3.415	-4.935	1.848	0.009	0.446
E3	-8.223	2.522	-2.512	3.87	0.467	3.874
E4	1.071	1.807	5.878	0.448	0.203	5.152
E5	1.683	1.679	1.079	2.822	0.256	2.14

As can be seen from Table 11, the binary logit regression analysis with 21 secondary indicators as independent variables and willingness to return home to start a business as dependent variable shows that seven indicators, namely, entrepreneurial willingness, entrepreneurial motivation, entrepreneurial ability, nature of hukou, household economic income, school entrepreneurship education, and entrepreneurial policy environment, have a significant positive impact on the willingness to return home to start a business.

The regression results will be analyzed one by one below.

(1) Personal factors

Individual factors include entrepreneurial willingness, gender, education, university type and university grade. Among them, the regression coefficient of entrepreneurial willingness is 9.059, and shows a significance of 0.01 level (z=4.188, p=0.000<0.01), which means that entrepreneurship has a significant positive influence on the willingness of agricultural college students to return to their hometowns to start their own businesses. The regression coefficient of education is 0.113, but it does not show significance (z=3.692, p=0.092>0.01), which means that education plays a certain degree of positive influence on the willingness of agriculture-related college students to return to their hometowns for entrepreneurship. And the regression coefficients of gender, university type, and university grade are -0.671, -10.516, and -20.285 respectively, which means that gender, university type, and university grade will not have a significant positive influence on the willingness of agriculture-related college students to return to their hometowns to start their own businesses.

In conclusion, among the five indicators of personal factors, there is an indicator of entrepreneurial willingness to have a significant positive effect on the willingness of agriculture-related college students to return to their hometowns to start their own businesses.

(2) Influence factors of personal ability on entrepreneurship

The influencing factors of personal ability on entrepreneurship contain basic personal characteristics, entrepreneurial motivation, entrepreneurial ability, rural sentiment and urban life pressure. The regression coefficient of entrepreneurial motivation is 2.779, which is significant (z=3.034, p=0.000<0.01), meaning that entrepreneurial motivation has a significant positive influence on the willingness of agricultural college students to return to their hometowns to start their own businesses. The regression coefficient of entrepreneurial ability is

4.081 and shows significance at 0.01 level (z=1.776, p=0.000<0.01), which means that entrepreneurial ability has a significant positive influence on the willingness of agriculture-related college students to return to their hometowns to start their own businesses, and the OR value of the superiority ratio is 59.163, which means that the entrepreneurial ability is able to support the willingness of rural college students who return to their hometown to start businesses, which is not supported by entrepreneurial ability. That is to say, the willingness of rural college students whose entrepreneurial ability can support entrepreneurship in their hometowns is 59.163 times more than that of rural college students whose entrepreneurial ability cannot support entrepreneurship in their hometowns.

In conclusion, among the five indicators of the influence of personal ability on entrepreneurship, entrepreneurial motivation and entrepreneurial ability have a significant positive influence on the willingness of agriculture-related college students to return to their hometowns to start their own businesses, that is to say, if they have strong entrepreneurial motivation and entrepreneurial ability, agriculture-related college students are more inclined to return to their hometowns to start their own businesses, and conversely, their willingness to return to their hometowns to start their own businesses is affected by the opposite effect, i.e., their willingness to return to their hometowns is lower.

(3) Family factors

Family factors include the nature of the household, the overall relationship with the family, the economic income of the family and the work of the parents. The regression coefficient of the nature of household is 3.861, which is significant at 0.01 level (z=5.056, p=0.000<0.01), implying that the nature of household has a significant positive influence on the willingness of college students majoring in agriculture to return to their hometowns to start their own businesses. The regression coefficient of family economic income is 2.062 and does not show significance (z=5.607, p=0.030>0.01), which means that family economic income plays a significant positive influence on the willingness of agriculture-related college students to return to their hometowns to start their own businesses. The regression coefficients of the overall relationship with family members and parents' work situation are -0.374 and 1.046 respectively, which means that the overall relationship with family members and parents' work situation will not have a significant positive impact on the willingness of agriculture-related college students to return to their hometowns to start their own businesses.

In conclusion, among the four indicators of family factors, the nature of hukou and family economic income have a significant relationship on the willingness of agriculture-related college students to return to their hometowns to start their own businesses, which means that for agriculture-related college students, the nature of hukou and family economic income have a greater impetus to their willingness to return to their hometowns to start their own businesses, which can enhance their willingness to return to their hometowns to start their own businesses.

(4) Educational factors

Educational factors include school entrepreneurship education and social entrepreneurship education. In this factor, the regression coefficient of school entrepreneurship education index is 0.852, and shows the significance of 0.01 level (z=5.482, p=0.005<0.01), that is to say, the school entrepreneurship education can produce a certain degree of positive influence on the willingness of college students majoring in agriculture to go back to their hometowns to start their own businesses. And the regression coefficient of social entrepreneurship education is -15.874, which means that social entrepreneurship education will not have a significant positive influence on the willingness of agriculture-related college students to return to their hometowns to start their own businesses.

In conclusion, among the 2 indicators of educational factors, school entrepreneurship education has a significant relationship on the willingness of agriculture-related college students to return to their hometowns to start their own businesses. That is to say, the entrepreneurship education provided by the school is more credible than the entrepreneurship education provided by the society for the agriculture-related college students.

(5) Entrepreneurial environment factors

The entrepreneurial environment factor contains five indicators: entrepreneurial policy environment, entrepreneurial financing environment, entrepreneurial service environment, entrepreneurial culture environment and rural development environment. Among them, the regression coefficient of entrepreneurial policy environment is 2.009, and shows the significance at 0.01 level (z=5.655, p=0.007<0.01), which means that entrepreneurial policy environment plays a significant positive influence on the willingness of college students majoring in agriculture to return to their hometowns to start businesses. The regression coefficient of rural development environment is -1.683, but it does not show significance (z=1.079, p=0.256>0.01), which means that rural development environment can have a certain positive influence on the willingness of agriculture-related college students to return to their hometowns. Besides, the regression coefficients of entrepreneurial financing environment, entrepreneurial service environment and entrepreneurial culture environment are -14.987, -8.223 and 1.071 respectively, which means that the entrepreneurial financing environment, entrepreneurial service environment and entrepreneurial culture environment do not have significant positive influence on the willingness

of agriculture-related college students to return to their hometowns to start their own businesses.

In summary, among the five indicators of entrepreneurial environment factors, entrepreneurial policy environment and rural development environment have a significant relationship on the willingness of agriculture-related college students to return to their hometowns to start their own businesses, that is to say, agriculture-related college students pay more attention to their hometowns' entrepreneurial support policies, and if the entrepreneurial support policies are stronger and more helpful, then they have a higher willingness to return to their hometowns to start their own businesses.

VI. Conclusion

This paper completes the empirical analysis of the influencing factors on the willingness of agriculture-related college students to return to their hometowns based on big data computation by designing a questionnaire on the willingness of agriculture-related college students to return to their hometowns, and constructing an influencing factor analysis model by using a gray correlation model and a logit regression model.

Among the 21 influencing factor indicators proposed in this paper, there are 7 factors of entrepreneurial willingness, entrepreneurial motivation, entrepreneurial ability, hukou nature, family economic income, school entrepreneurial education, entrepreneurial policy environment, which are significantly related to the willingness of agriculture-related college students to return to their hometowns, and the regression coefficients of the entrepreneurial willingness and the entrepreneurial motivation reach 9.059 and 4.081, which indicate that the entrepreneurial willingness and motivation are the key factors influencing the entrepreneurial willingness and the entrepreneurial motivation. It shows that entrepreneurial willingness and entrepreneurial motivation are the key factors affecting the willingness of agricultural college students to return to their hometowns. Therefore, entrepreneurship education, entrepreneurship preaching, entrepreneurship practice and other forms should be used to strengthen the entrepreneurial willingness and entrepreneurial motivation of college students majoring in agriculture, and to provide strong support in the policies and regulations on entrepreneurship in their hometowns.

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