Analysis of Factors Influencing the Employment Motivation of Rural Students in Agricultural Vocational Education – The Example of an Agricultural Vocational School in Chifeng

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Abstract—In recent years, Chinese national investment in vocational education has increased, especially in rural areas. However, the large amount of investment has not contributed to the promotion of the quality of vocational education. Moreover, the employment of vocational school students is facing serious challenges. The influence of factors such as backward technology, poor working conditions, and low welfare benefits in rural areas has led to the loss of a large number of talents after they have received vocational education, resulting in a serious lack of agricultural high-tech talents in rural areas. This paper uses research and analysis of questionnaires to study rural students in Chifeng on the issue of rural education, discusses the current employment situation of students in agricultural vocational schools, and analyzes the main motives of rural education values on students' going to rural areas for employment. The results show that 1) the urban orientation, as well as the utilitarianism of rural education, is not significant; 2) the lack of rural content in rural education affects rural students' future employment region choice, making rural students more inclined to employment in big cities; 3) the employment difficulty of rural students in the city causes the main influence on rural students' future employment region choice. At the same time, this paper proposes to change the status quo by combining education with information technology.

Keywords—rural education technology, information system, education equality, rural education informatization, vocational education

I. INTRODUCTION

In recent years, the backwardness of rural agricultural technology, poor working conditions, and low welfare benefits have led to a large brain drain. At the same time, the employment of rural vocational school students is facing serious challenges. In view of this, this paper aims to study the current employment situation of students in agricultural vocational colleges, explore whether rural education affects students in agricultural vocational colleges to serve rural areas from the perspective of rural students, and what kind of education they need more to promote rural revitalization. It also proposes policy recommendations for better retention of talents in rural areas and promotion of rural revitalization in the context of education informatization.

II. LITERATURE REVIEW

Ruan and Zheng [1] proposed the concept of educational pumping machines: "The current education system functions largely to siphon highly qualified rural workers from rural to urban areas, turning potential human capital that might otherwise benefit rural economic development into human capital that benefits only urban economic development. Increased investment in education has failed to promote increased rural human capital and has not shown a causal relationship with rural economic growth". Well-educated rural students are more likely to seek employment in cities and abandon development in their hometowns, thus creating a misalignment of investment in rural education. Lu [2] suggested that when discussing the "root cause of poverty" in poor areas, human capital theory suggests that the root cause lies in the quality of the population, however, those who improve their quality through education eventually flee the poor areas, and those who stay in the same place are still a group of people with low quality who cannot go out, and poverty remains. Ge [3] proposed that "education has a strong dependence on the political and economic systems, which makes the urban-rural dual structure easy to be brought into the relationship between urban and rural education within the education system. On the one hand, for a long time, there has been a bias in the allocation of public education resources in China that emphasizes urban areas over rural areas, exacerbating the marginalized position of rural education". Tian [4] suggested that rural education, especially rural school education, is aimed at test-taking, its content is a theoretical textual curriculum, closed didactic teaching is adopted, and the learning process is

detached from social and productive life, leading to a disconnect between teaching and learning, knowledge and action. Su and Qu [5] mentioned that "the value orientation of urbanism directly leads to the flight of rural elites from the countryside, and ultimately causes the decline of rural culture, which is fundamentally detrimental to the long-term development of the countryside".

The author argues that most of the available empirical studies on employment expectations of rural students are based on static macro perspective analysis, and there are fewer relevant studies on the factors that influence and drive the employment of students in vocational institutions. Therefore, this paper attempts to analyze the willingness of agricultural vocational school students to seek employment in rural areas from the perspectives of reasons and motivations, to explore what kind of value orientation rural students need more to promote personal development with students as educational subjects, and to make policy recommendations in the context of

educational informatization to make up for the shortcomings of existing studies.

III. STUDY DESIGN

A. Questionnaire Design and Data Collection

This paper uses a questionnaire method. The questionnaire consists of 30 questions in 3 parts: the first part is the "Basic Information Survey"; The second part is the "Rural Education Survey"; The third section is the "Employment Intentions Survey". The survey was scored on a 5-point Likert scale. For the positive and negative nature of the questions, the positive questions were assigned a score of 5, 4, 3, 2 and 1, while the negative questions were assigned a score of 1, 2, 3, 4 and 5. The higher the score, the higher the satisfaction level of the indicator. The survey sample of this study was mainly selected from rural students in an agricultural vocational school in Chifeng City, Inner Mongolia Autonomous Region. 373 questionnaires were distributed, and 347 valid questionnaires were returned.

TABLE I. RESULTS OF FREQUENCY ANALYSIS

Name (of a thing)	Options	Frequency	Percentage (%)	Cumulative percentage (%)
Gender (n=347)	male	155	44.67	44.67
	women	192	55.33	100
Being an only child (n=347)	be	130	37.46	37.46
	deny	217	62.54	100
Age (n=347)	15	6	1.73	1.73
	16	43	12.39	14.12
	17	133	38.33	52.45
	18	118	34.01	86.46
	19	38	10.95	97.41
	20	7	2.02	99.42
	21	2	0.58	100
Annual household income profile (n=347)	low income	174	50.14	50.14
	Lower middle income	103	29.68	79.83
	Moderate income	70	20.17	100
Education of parents (n=347)	University undergraduate and above	2	0.58	0.58
	University Specialist	13	3.75	4.32
	high school	58	16.71	21.04
	Lower secondary and below	274	78.96	100
add up the total		347	100	100

As can be seen from Table I, in terms of gender distribution, the majority of the sample was female, with a proportion of 55.33%, while the proportion of the male sample was 44.67%. In terms of being an only child, more than 60% of the sample were non-only children and the proportion of the only child sample was 37.46%. In terms of age distribution, the majority of the sample was 17–18 years old and the percentage was 72.34%. In terms of annual household income, the sample had relatively more low-income households, with a proportion of 50.14%. In terms of parental education, the proportion of the sample with parents with lower secondary education and below was 78.96%.

B. Test of Reliability of Indicator

The reliability and stability of the survey questionnaire comes from the indicator reliability. In this paper,

Cronbach, a coefficient method is used and the value of a coefficient can be obtained by Reliability Analysis in SPSS software [6]. The results of testing the reliability of indicators in this paper are shown in Table II.

TABLE II. CRONBACH'S RELIABILITY ANALYSIS

Number of items	Sample size	Cronbach alpha coefficient
14	347	0.868

As can be seen from Table III, the value of the reliability coefficient is 0.868, which is greater than 0.8, thus indicating the high quality of the reliability of the study data [7].

C. Testing the Validity of Indicators

In this paper, KMO and Bartlett's test were used, and the test value of the validity index KMO was 0.853,

which indicates that the data investigated in this study are suitable for factor analysis. Therefore, the validity of the questionnaire is reasonable. The test results of the validity of the indicators in this paper are shown in Table III.

TABLE III. KMO AND BARTLETT'S TEST

KMO value		0.861
	approximate cartesian	1977.426
Bartlett sphericity test	df	91
	p-value	0.000

From Table IV, it can be seen that: all the research items correspond to a common degree value higher than 0.4, which indicates that the information of the research items can be extracted effectively and efficiently. In addition, the KMO value is 0.861 which is greater than 0.6 and the data can be extracted information effectively. In addition, the variance explained values of the three factors are 24.078%, 18.655%, and 17.843% respectively, and the cumulative variance explained after rotation is 60.576% > 50%. It means that the information of the study term can be effectively and efficiently extracted out.

D. T-Test Analysis

- Gender

TABLE IV. T-TEST ANALYSIS RESULTS OF GENDER

	Sex ((mean ± standard))		t	p
	((n=155))	((n=192))		
Choice of future employment area	1.56±0.68	1.64±0.73	−0.970	0.333

* $p < 0.05$ ** $p < 0.01$

From Table IV, it can be seen that using t-test to investigate the difference of gender on the choice of future employment area, it can be seen from the above table that: none of the different gender samples will show significant (($p > 0.05$) for all the choice of future employment area [8–10]

- Only child

TABLE V. T-TEST ANALYSIS RESULTS OF ONLY CHILD

	Being an only child ((mean ± standard))		t	p
	((n=130))	((n=217))		
Choice of future employment area	1.58±0.70	1.61±0.71	−0.360	0.719

* $p < 0.05$ ** $p < 0.01$

As can be seen from Table V, none of the samples of whether or not they are only child will show significant (($p > 0.05$) for the choice of future employment area [8–10].

- Age

As can be seen from Table VI, none of the different age samples will show significant (($p > 0.05$) for all of the choice of future employment area [8–10].

- Annual household income

As can be seen from Table VII, none of the different samples of annual household income will show significant (($p > 0.05$) for all of the future employment area choices [8–10].

- Level of parental education

Table VIII shows that parental education is significant at the 0.05 level ($F = 3.112$, $p = 0.026$) for the choice of future employment area, and the specific comparison of the differences shows that the comparison of the mean scores of the more significantly different groups results in a preference for urban employment for children whose parents have a bachelor's degree or higher [8–10].

TABLE VI. ANALYSIS OF VARIANCE RESULTS OF AGE

	Year ((mean ± standard))							F	p
	15.0 (n=6)	16.0 (n=43)	17.0 (n=133)	18.0 (n=118)	19.0 (n=38)	20.0 (n=7)	21.0 (n=2)		
Choice of future employment area	1.67±0.52	1.60±0.73	1.62±0.71	1.56±0.73	1.61±0.64	1.71±0.49	2.50±0.71	0.652	0.688

* $p < 0.05$ ** $p < 0.01$

TABLE VII. ANALYSIS OF VARIANCE RESULTS OF ANNUAL HOUSEHOLD INCOME

	Annual household income ((mean ± standard))			F	p
	Low harvest ((n=174))	Moderate to low income ((n=103))	Moderate collection ((n=70))		
Choice of future employment area	1.56±0.72	1.67±0.69	1.61±0.69	0.829	0.437

* $p < 0.05$ ** $p < 0.01$

TABLE VIII. ANALYSIS OF VARIANCE RESULTS OF PARENTAL EDUCATION COURSE

	Parental education course ((mean ± standard))				F	p
	Undergraduate and above ((n=2)	University specialist (n=13)	High school, vocational high school, secondary school (n=58)	Lower secondary and below (n=274)		
Choice of future employment area	3.00±0.00	1.62±0.65	1.69±0.73	1.57±0.70	3.112	0.026*

* $p < 0.05$ ** $p < 0.01$

E. Relevance Analysis

The correlation analysis was used to investigate the correlation between future employment area choice and four items respectively: urban orientation of rural education, utilitarianism of rural education, lack of rural content in rural education, and difficulty of employment of rural students in urban areas, using Pearson's correlation coefficient to indicate the strength of the correlation (Table IX). The specific analysis shows that

the correlation coefficient value between future employment area choice and rural education urbanization orientation is −0.091, which is close to 0, and the p-value is 0.092 > 0.05, thus indicating that there is no correlation between future employment area choice and rural education urbanization orientation. The value of correlation coefficient between future employment area choice and utilitarianization in rural education is −0.093 which is close to 0 and the p-value is 0.083>0.05, thus indicating that there is no correlation between future employment area choice and utilitarianization in rural education. The correlation coefficient value between future employment area choice and lack of rural content in rural education is −0.105 and shows a significance at 0.05 level, thus indicating that there is a significant negative correlation between future employment area choice and lack of rural content in rural education. The correlation coefficient value between future employment area choice and difficulty of employment in urban areas for rural students is −0.129 and shows a significance at 0.05 level, thus indicating a significant negative relationship between future employment area choice and difficulty of employment in urban areas for rural students [9, 11, 12].

TABLE IX. PEARSON CORRELATION - STANDARD FORMAT

	Choice of future employment area
Urbanization orientation of rural education	−0.091
Utilitarianization of rural education	−0.093
Lack of rural content in rural education	−0.105*
Difficulty of employment in urban areas for rural students	−0.129*

* $p < 0.05$ ** $p < 0.01$

F. Linear Regression Analysis

From Table X, it can be seen that linear regression analysis was carried out with utilitarianization of rural education, urbanization orientation of rural education, lack of rural content in rural education, and difficulty of employment of rural students in urban areas as independent variables and choice of future employment region as the dependent variable, the model equation is: choice of future employment region = 2.320 − 0.010*utilitarianization of rural education − 0.036*rural education urbanization orientation − 0.052*lack of rural content in rural education − 0.104*difficulty of employment of rural students in urban areas, the model R-squared value is 0.027, implying that at least one of the above independent variables can explain 2.7% of the variation in future employment area choice. When the model was tested for F-test, it was found that the model passed the F-test ($F = 2.404$, $p = 0.050 < 0.05$), which means that at least one of the independent variables has an impact on the choice of future employment area. The VIF values in the model are all less than 5, which means that there is no co-linearity; and the D-W values are around the number 2, thus indicating that there is no autocorrelation in the model, and there is no correlation between the sample data, and the model is better. The final specific analysis shows that rural education utilitarianism, urbanization orientation of rural education, and the lack of rural content in rural education do not have an influential relationship on the choice of future employment area. The regression coefficient value of −0.104 ($t = −2.221$, $p = 0.027 < 0.05$) for the difficulty of employment in urban for rural students implies that the difficulty of employment in urban for rural students has a significant negative relationship with the choice of future employment region [9, 13–15].

TABLE X. RESULTS OF LINEAR REGRESSION ANALYSIS (N=347)

	Non-standardized factor		Standardization factor	t	p	VIF	R²	Adjustment of R²	F
	B	standard error	Beta						
a constant (math.)	2.320	0.242	−	9.582	0.000**	−	0.027	0.016	*F* (4,342) = 2.404, *p* = 0.050
Utilitarianization of rural education	−0.010	0.077	−0.010	−0.125	0.900	2.292			
Urbanization orientation of rural education	−0.036	0.057	−0.043	−0.625	0.532	1.654			
Lack of rural content in rural education	−0.052	0.054	−0.068	−0.951	0.342	1.814			
Difficulty of employment in urban areas for rural students	−0.104	0.047	−0.119	−2.221	0.027*	1.010			
Dependent variable: choice of area of future employment									
D-W value: 2.050									

* $p < 0.05$ ** $p < 0.01$

IV. DISCUSSION

The famous agricultural economist Schults [16] pointed out that "the development of rural societies requires greater economic investment in education, which is focused on upgrading educational information technology". Education informatization can break through time and space restrictions, promote resource sharing, expand the scope of education received, and integrate educational concepts, educational resources, and teaching methods from different areas in urban and rural areas, so that high-quality educational resources can be shared between urban and rural areas. "It is becoming an effective way to narrow the education gap, promote educational equity, and improve the quality of education. It enables rural students to enjoy the right to education and resources on an equal footing with urban students" [17]. As the American political philosopher Rawls said,

"In order to provide society with equal opportunities and equitable resources in a universal sense, we need to help those disadvantaged groups who are in a socially disadvantaged position and help them enhance their ability to promote social development through modern educational means, and ultimately promote the level of development of society as a whole" [18].

Education information technology can be used to help solve problems such as inequity in education between urban and rural areas. Therefore, I make the following suggestions. (1) Increase investment in information technology hardware, improve educational facilities in rural primary and secondary schools, and increase financial investment in information technology equipment in rural schools. (2) Provide specific teaching designs, diverse learning models, and innovative curriculum development for rural students, create learning contexts that meet their needs, stimulate their interest and motivation, and find appropriate learning strategies for them. Provide teachers with convenient teaching services and extensive teaching resources. (3) Rural schools should closely integrate modernization with localization and make the promotion of farming civilization and vernacular culture a goal pursuit. Tian [19] mentioned in his study that rural education should combine the comparative learning of local humanities and geography and other vernacular knowledge in rural areas to shape students into living individuals with free-thinking, independent spirits, rich emotions and moral self-discipline. Therefore, to Focus on developing local curricula and advanced education and teaching resources adapted to local rural education and building a distinctive culture in rural schools. This "technological governance" of rural education advocates a local curriculum that offers unlimited possibilities to meet the development needs of rural youth and helps to cultivate a group of local talents with excellent character, rural emotions and values, rural cultural confidence, and acceptance of modern civilization. (4) "When modern technology should be upgraded, the technology should be placed under the institutional framework to achieve optimal governance of rural education. Secondly, the government should develop a relevant legal system of Internet technology in order to improve the system of rural education and ensure the legal application of rural Internet technology in rural education" [20]. Furthermore, when modern technology comes into the public eye, its existence should be dedicated to guaranteeing the realization of citizens' right to education. When children in urban areas enjoy the dividends of modern technology, they should also try to ensure that children in rural areas receive the same treatment and that villagers' basic educational rights and interests are obtained and realized.

This study is a questionnaire survey on the current employment situation of students in an agricultural vocational college of rural origin in Chifeng City, Inner Mongolia Autonomous Region. Since the sample of this survey is small, the data source is narrow, and the main application is descriptive statistical analysis, future research can focus on econometric empirical studies and make positive contributions to improving this current situation and promoting vocational education and employment linkage based on in-depth analysis.

V. Conclusion

Based on the analysis above, the following conclusions were reached: (1) Nearly half of the students surveyed are willing to go to big cities for employment, and as many as 2/5 of them want to choose small and medium-sized cities, while only about 10% of them are willing to go to towns and villages for employment. This indicates that most of the students tend to prefer big cities and small and medium-sized cities in their choice of employment. (2) We can see that there is no significant difference in gender, only child or not, age, and annual household income in the choice of future employment area. When parents have a bachelor's degree or higher in education, their children are more likely to prefer urban employment. (3) The main reason why the surveyed students wanted to work in big cities was that they could get better personal development, accounting for nearly 80%. This reflects the side that rural education does not have an absolute influence on rural students leaving the countryside. (4) Based on the correlation analysis, we can see that neither utilitarianization of rural education nor urbanization orientation of rural education is significantly correlated with the choice of future employment areas. The lack of rural content in rural education and the difficulty of employment of rural students in urban areas have a negative correlation on the choice of future employment areas. (5) After a linear regression analysis, it can be concluded that the value of the regression coefficient of the difficulty of employment in urban areas for rural students is -0.104, which means that the difficulty of employment in urban areas for rural students has a significant negative relationship on the choice of future employment area.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

Jiaming Zhang conducted the research and analyzed the data also wrote the paper; Shengpeng Shi and Zhiqiang Luan helped Jiaming with topic selection and writing. All authors had approved the final version.

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