

Analysis of the Influencing Factors of College Students' Willingness to Entrance Examination for Postgraduate Based on Binomial Logistic Regression Model

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ABSTRACT

With the development of social economy, the urgent demand for highly educated and high-quality talents, as well as the continuous improvement of social education system, postgraduate entrance examination has gradually become a hot topic, and many undergraduates take postgraduate entrance examination as their learning objectives. However, due to the pursuit of self-value, physical and psychological factors, satisfaction with their major, family attitude, economic situation, national policies and employment pressure and other factors, all of these factors have different effects on their willingness to take postgraduate examination. Through single factor logistic regression analysis and multivariate logistic regression analysis, this paper concludes that the greater influence of college students' willingness to take the postgraduate entrance examination is the pursuit of self-value. This paper puts forward the suggestions and countermeasures to help students correctly understand the postgraduate entrance examination and make reasonable choices according to their own situation.

Keywords: college student, willingness for postgraduate entrance examination, binomial Logistic regression analysis

I. INTRODUCTION

According to the National Postgraduate Admissions Data Survey Report of China Education Online, the number of postgraduate applicants reached 2.38 million in 2018, an increase of 370,000 over 2017. In 2019, the number of postgraduate entrance examinations reached 2.9 million, and it is expected that the number of postgraduate entrance examinations in 2020 will reach 3.3 million, or even exceed 3.5 million. At the same time, colleges and universities have taken the postgraduate entrance examination rate as their assessment objectives, and the "postgraduate entrance examination fever" continues to heat up. A scientific and reasonable understanding of the influencing factors of college students' willingness to take postgraduate entrance examinations is conducive to helping student groups correctly understand postgraduate entrance examinations, promoting universities to formulate reasonable talent training programs, and further improving the quality of the talent team [1].

II. RESEARCH MATERIALS AND METHODS

A. Data source

Taking the graduates in 2020 as the research object, the questionnaire is distributed, and the survey data are classified and counted, and the influence of various factors on the postgraduate entrance examination intention is analyzed. Finally, 204 valid questionnaires are collected. The questionnaire mainly involves the following aspects: ("Table I")

TABLE I. DEFINITION AND DESCRIPTION OF VARIABLES

Variable	Variable Assignment and Meaning
Whether there is a willingness to enter postgraduate	0=No, 1=Yes
The influence of pursuing self-value on postgraduate entrance examination	1=Most important, 2=Very important, 3=General importance, 4=unimportance
The influence of physical condition and psychological factors on postgraduate entrance examination	
The influence of unsatisfied major on postgraduate entrance examination	
The influence of family support on postgraduate entrance examination	
The influence of family economic conditions on postgraduate entrance examination	
The influence of national policy support on postgraduate entrance examination	
The influence of employment pressure on postgraduate entrance examination	

B. Reliability and validity analysis

In order to verify the consistency and stability of the test results of the scale, and to evaluate the influence of measurement errors on the test results, it is first necessary to perform reliability analysis on the collected data. Reliability analysis refers to the degree of consistency of the results obtained when the same indicators or measurement tools are used to repeatedly measure the same object. The degree of reliability can be reflected by the Cronbach α coefficient. This paper uses SPSS 24.0 software to analyze the reliability of the influencing factors scale of college students' willingness to enter postgraduate entrance examination. Through reliability analysis, the Cronbach α coefficient is 0.751, which is greater than 0.7, and the questionnaire structure is considered acceptable.

Validity analysis is the analysis of the degree of agreement between the measurement results and the survey object. It is an important means to judge the validity of the questionnaire data. This article uses factor analysis to analyze the structural validity of the questionnaire. Through the validity analysis, the corresponding P value of Bartlett test is 0.000, less than 0.05, and the KMO (Kaiser-Meyer-Olkin) value is 0.771. Generally speaking, KMO value is greater than 0.7, indicating that the structure validity of the questionnaire is good.

C. Research method

In the data analysis of the questionnaire, "whether you want to take the postgraduate entrance examination" is set as the dependent variable, and "yes / no" is divided into two levels. The factors that affect college students' willingness to take the postgraduate entrance examination involve the pursuit of self-value, physical and psychological factors, satisfaction with their major, family attitude, economic situation, national policies and employment pressure [2], [3]. In

this paper, SPSS 24.0 software is used to analyze the data by univariate binomial logistic regression analysis. On this basis, the significant variables are diagnosed with collinearity, and finally the multivariate logistic regression analysis is carried out [4].

III. BINARY LOGISTIC REGRESSION ANALYSIS

A. Single factor analysis

A single factor binomial Logistic regression analysis is performed on 7 variables, and the given significance level is 0.05. The results are analyzed as follows:

Pursuit of self-value ($P=0.000$), body condition ($P=0.003$), professional satisfaction ($P=0.000$), family attitude ($P=0.000$), family income ($P=0.023$), national policy ($P=0.254$), employment pressure ($P=0.002$). It can be seen that except for the national policy ($p=0.254$) greater than the significance level of 0.05, which has no significant effect on the postgraduate entrance examination. The other variables are all less than the significance level of 0.05, which have a significant effect on the willingness to enter the postgraduate entrance examination, and may be related influencing factors [5].

Excluding national policy factors, further screening of important influencing factors among many independent variables, next, the paper investigates whether there is a linear relationship between the remaining six factors, and performs a collinearity diagnosis on these six factors. The results are as follows: ("Table II")

TABLE II. COLLINEARITY DIAGNOSIS

Influencing Factors	t	Significant	Tolerance	VIF
Pursuit of self-value	-5.991	.000	.761	1.314
Physical condition and psychological factors	-.990	.323	.717	1.395
Satisfaction with the major	-1.621	.107	.750	1.334
Family attitude	-1.256	.211	.719	1.391
Family financial situation	.128	.898	.700	1.429
Employment pressure	.546	.586	.695	1.439

If the tolerance is less than or equal to 0.1 or the variance expansion factor VIF (Variance Inflation Factor) is greater than or equal to 10, it indicates that there is a serious collinearity between the independent variables. It can be seen from the table that the tolerance of the 6 independent variables is greater than or equal to 0.1, and all are above 0.6, and the VIF is far less than 10. Therefore, it can be considered that there

is no serious collinearity among the above 6 independent variables, and multi-factors can be directly performed logistic regression analysis.

B. Multivariate analysis

Multivariate binomial logistic regression analysis is performed [6], and the results are as follows: ("Table III")

TABLE III. MULTIVARIATE BINOMIAL LOGISTIC REGRESSION ANALYSIS

Influencing Factors	B	Wald	Significant
Pursuit of self-value	-1.709	30.725	.000
Physical condition and psychological factors	-.484	3.336	.051
Satisfaction with the major	-.434	3.336	.068
Family attitude	-.322	1.703	.192
Family financial situation	.005	.000	.985
Employment pressure	.199	.794	.373

It can be seen that students' pursuit of self-value affects their willingness to take postgraduate examination. Its B value is negative, indicating that the less college students who do not pursue their own value, the lower their willingness for postgraduate entrance examination. Conversely, the more students who pursue their own value, the higher their willingness for postgraduate entrance examination.

IV. CONCLUSION

The results show that the pursuit of self-value, physical and psychological factors, satisfaction with their major, family attitude, economic situation and employment pressure are significantly correlated with their intention to take the postgraduate entrance examination, among which the pursuit of self-value is the key factor. In view of the above factors, the following suggestions are put forward from the perspective of the country, colleges, families and college students:

A. State and family support

The state can appropriately strengthen the support for poor college students to take the postgraduate entrance examination. Families can also support their

children's postgraduate entrance examination according to their actual economic situation, so that candidates can concentrate more energy on the postgraduate entrance examination, and avoid college students from being forced by economic pressure and burden to hinder the realization and sublimation of their own value.

B. Colleges should integrate and optimize resources

Colleges should make preparations for postgraduate students in advance, formulate corresponding support for poor postgraduate students, reduce the burden of economy and inner pressure for postgraduate candidates, so that they can enjoy the best professional knowledge education and improve their learning efficiency.

C. Improving the mode of cultivating talents in colleges

Starting with the cultivation of psychological qualities, students should be encouraged to develop good psychological qualities and healthy personality with self-esteem, self-love, self-discipline and self-improvement. Colleges should actively hold various scientific lectures to nurture the campus life of college students, improve the cultivation of college students' humanistic quality, and create a good humanistic

environment for college students. At the same time, it pays attention to the cultivation of ideological quality, and continuously guides college students to develop a healthy psychological quality and healthy personality.

D. Candidates should make full investigation

Interest is the best teacher of mankind, so candidates should choose the school and research field that suits them before preparing for the exam. Choosing the professional field that they are satisfied with is the most important thing. Before the postgraduate entrance examination, more communication with home is required, and understanding the family's economic situation and obtaining parental support are issues that cannot be ignored.

E. Body is the capital of revolution

Body is an important guarantee to provide the primary productivity. Students who take part in postgraduate entrance examination should always keep a positive and optimistic attitude of preparing for the examination, and insist on exercising every day and doing both inside and outside. In addition to the intake of knowledge, more is the improvement of personal physical quality and personal comprehensive competitiveness.

F. Establishing a correct concept of postgraduate entrance examination

Nowadays, the process of college students' postgraduate entrance examination has gradually become a process of realizing self-value. Through postgraduate study and further education, it can comprehensively improve the comprehensive quality of individuals, and lay a solid foundation for their future work and realization of their own value. The group of college students in the new period should establish a correct outlook on postgraduate entrance examinations and not blindly follow the trend. College students should make a good career plan as soon as possible, strengthen their beliefs, continue to learn, consolidate their professional knowledge, improve their comprehensive quality in all aspects, and try to constantly surpass themselves.

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