Comprehensive Evaluation of the Student Management in Higher Education Institutions: an Empirical Analysis from China

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Abstract: With the continuous development of China's higher education and the rapid expansion of students, the student management in higher education is becoming more and more important. In this paper, the author analyzes the three dimensions of student management as management object, management theory and management experience. Then, the author makes empirical analysis by using exploratory factor method, the result shows that the cumulative variance contribution rate is 68.7% and prove that these three factors has strong explanation ability in student management. From the reliability test, the result shows that cronbach's alpha of these three dimensions are 0.9072, 0.8472 and 0.8116, and all the correlation is greater than 0.5. It proves that the initial scale has good internal consistency and reliability. Finally, the author put forward relevant policy suggestions for student management in higher education institutions.

Keywords: Exploratory factor analysis, higher education, SPSS, student management.

1. INTRODUCTION

The personnel training is one of the basic functions in colleges and universities, with the continuous development of China's higher education and the rapid expansion of students, the student management in higher education is becoming more and more important [1]. The whole process of college student's management covering from the admission to graduation, including the student thought, study, work, life, etc [2]. To sum up, the main work of student management can be divided into political thought education, learning guidance, supervision, transaction management and behavior guidance [3].

Through the study of previous literature, we find that student management mainly includes three aspects as management object, management theory and management experience. First, making comprehensive analysis of the contemporary college students' essence and characteristic is the prerequisite for successful student management [4, 5]; second, in order to manage college students, managers must grasp the relevant knowledge of management theory [6]. Finally, management experience is based on previous practice a, to sum up, the resulting experience is a special part of the management of college students [7, 8].

2. DATA COLLECTION AND MODEL DESIGE

2.1. Questionnaire Design

According to previous research on the questionnaire survey, the design thought of this questionnaire is divided into

five steps: (1) design several categories according to the existing literature and research; (2) integrate literature and refine each category; (3)assume the logical relationship existing between variables, then set up related issues;(4) using expert interviews, adoption their opinions and suggestions, then improve the questionnaire; (5) determine the measurement problem for each variable by exploratory factor analysis, and determine the final questionnaire. The idea of questionnaire design come from arranging and analyzing previous literature, it refers to student management in higher education institutions. We obtains the preliminary questionnaire by summarizing and comparing existing results, then use expert interviews to increase the appropriateness of the questionnaire items.

In order to improve the questionnaire as simple and effective, we will release a part of the pretest questionnaire, through the screening of the results to determine the final items. Finally, we will release a lot of formal questionnaire and collect data, then make exploratory factor analysis, reliability test and validity test, by using SPSS software.

2.2. Variable Description

There are three primary indicators of student management in as "Management object", "Management theory" and "Management experience". The primary indicators were shown in Table **1**.

There are four secondary indicators in management object (MO), as:

- MO1: In the process of student management, I want to understand students' growth environment

- MO2: In the process of student management, I want to understand the personality characteristics of students

Table 1.   Three dimensions of student management in universities.

Variable	Variable Description	Abbreviations
Management object	Comprehensive and accurate understanding the nature and characteristics of the contemporary college students	MO
Management theory	The relevant theory of how to management college students	MT
Management experience	The experience of student management based on working practice	ME

Table 2.   Description of the sample.

Type of University	Number	%	Work Experience	Number	%
Scie.& engg. colleges	248	58.07	Less than 2 years	196	225
Liberal arts colleges	82	19.43	3 years to 5 years	127	182
Comprehensive Univ.	91	21.31	6 years to 10 years	95	95
others	6	1.4	More than 11 years	9	283
The number of students that he (she) management	number	%	Education	number	%
Less than 50	26	6	College	21	4.91
50 to 100	70	16.3	Bachelor	176	41.21
100 to 200	203	47.54	Master	230	53.86
More than 200	128	29.97	Doctor	9	2.1

- MO3: In the process of student management, I want to understand the psychological characteristics of students
- MO4: In the process of student management, I want to understand the behavioral characteristics of students

There are five secondary indicators in management theory (MT), as:

- MT1: I should have the basic theoretical knowledge of the management of students (such as education, management, psychology, etc.)
- MT2: I should have the relevant theoretical knowledge of student management (such as sociology, strategic management, ethics, etc.)
- MT3: I should have the knowledge of other theory of student management (such as flexible management, effective communication, etc.)
- MT4: I should have the knowledge of college students' career planning and employment guidance
- MT5: I should have the knowledge of college students' correct world outlook, outlook on life and values.

There are four secondary indicators in management experience (ME), as:

- ME1: When dealing with student affairs, I should be better to judge and distinguish the authenticity of the facts
- ME2: When dealing with student affairs, I should be better grasp the opportunity, control the process and predict the trend

- ME3: I should to understand and use the method of classified management in student management
- ME4: I should better use the working skills, and summarized the experience or lessons from previous work

2.3. Descriptive Analysis of Data

The data was collected from 14 universities from Eastern China. We issued total of 800 questionnaires to college counselor. The questionnaire was sent by mail survey and e-mail, recycling 549 copies and generating 427 valid returned questionnaires, the basic information of the questionnaires was shown in Table **2**.

3. EMPRICAL ANALYSIS

3.1. Exploratory Factor Analysis

Then, we make empirical analysis of all variables by using exploratory factor analysis. The result shows that the KMO value is 0.931 and has passed the Bartlett's spherical inspection, so it is suitable for exploratory factor analysis. According to the method of principal component, intercepting data by using characteristic value as 1, then we obtain the factor load distribution as shown in Table **3**. The result shows that after extracted the three factors that eigenvalues greater than 1, the cumulative variance contribution rate is 68.7% and prove that these three factors has strong explanation ability in student management.

3.2. The Reliability Test

To examine the validity of the sample data, draw a few index value: Chi square values ($\chi2$) is 146.21, degree of

Table 3.   The results of exploratory factor analysis.

Evaluation index	Factor		
	MO	**MT**	**ME**
MO→MO1	0.7035	0.1250	0.3568
MO→MO2	0.7862	0.2079	0.4628
MO→MO3	0.8386	0.2792	0.3562
MO→MO4	0.7579	0.1986	0.2953
MT→MT1	0.2088	0.7920	0.2712
MT→MT2	0.1645	0.7269	0.1680
MT→MT3	0.2420	0.8232	0.1749
MT→MT4	0.3356	0.7637	0.0941
MT→MT5	0.3401	0.6980	0.2732
ME→ME1	0.2357	0.1823	0.6722
ME→ME2	0.4023	0.2946	0.7301
ME→ME3	0.2056	0.2778	0.6884
ME→ME4	0.3629	0.3047	0.7210

Table 4.   The reliability test of each factor.

Factor	Evaluation Index	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
M0	M01	0.6724	0.8527	0.9072
	M02	0.8035	0.8531	
	M03	0.7786	0.7925	
	M04	0.7526	0.8201	
MT	MT1	0.7342	0.7786	0.8472
	MT2	0.7738	0.8230	
	MT3	0.6984	0.7459	
	MT4	0.7216	0.7846	
	MT5	0.6508	0.7021	
ME	ME1	0.6723	0.8232	0.8116
	ME2	0.7942	0.8637	
	ME3	0.6561	0.8356	
	ME4	0.7037	0.7562	

freedom (df) is 96, ($\chi2$/df) is 1.428, P value is 0.0004, the approximate residual root mean square value is 0.052, the specification of adaptation is 0.827, non standardized fitness index is 0.964, parsimonious fit indices is 0.815 simple criteria, comparison fit indices is 0.972, incremental fit indices is 0.910 and relative fit indices is 0.924. Standardization of RMS residual values is 0.037, fit index is 0.791, and adjust-

ing the fit indices is 0.815, parsimonious goodness of fit index is 0.633. The following table control evaluation criteria, the display mode fit of belonging to a good level, therefore, the evaluation model is a consistent with empirical data models, the overall construct validity is high, can carry on the factor analysis. The result of Validity analysis was shown in Table **4**. From Table **4**, we can get that Cronbach's alpha

Table 5. **Discriminate validity of the three dimensions.**

Latent Variable	MO	MT	ME
MO	0.872		
MT	0.86**	0.913	
ME	0.83**	0.79**	0.885

Note: * * indicates significance level of 0.01

of three dimensions are 0.9072, 0.8472 and 0.8116, and all the correlation is greater than 0.5. The result proves that the initial scale has good internal consistency and reliability. In addition, the Cronbach's Alpha will decrease when any item has been deleted, so that all variables should be retained.

3.3. The Validity Test

The validity test is mainly used to judge whether the variable characteristics fit research design. In this paper, we use three indicators to test the validity as content validity, convergent validity and discriminate validity.

a) *Content validity*: The content validity is mainly used to judge whether the expression is true and accurate to the concept of a measured variables and the related contents in the logic relation. There are three kinds of methods to ensure the content validity as: First, subjective judgment; Second, through literature study and summarization on previous research; Third, discuss the contents of the initial questionnaire items with experts, teacher and student after the initial scale is completed, then get the feedback and modify the scale.

b) *Convergent validity*: Convergent validity is mainly used to judge whether all items in one dimension is highly relevant. Fornell & Larcker (1981) pointed out that convergent validity of variables can be tested by using the average variance extracted (AVE) [9]. Through analysis by using AVE method, we get that the AVE values of the three dimensions are 0.794, 0.817, 0.805, and this means that all variables have good convergent validity in this paper.

c) *Discriminate validity*: Discriminate validity mainly used to determine the difference degree between different dimensions. AVE square roots of the three latent variables are 0.872, 0.913, 0.885; each is greater than the correlation coefficient between the latent variables and other variables, as shown in Table **5**. The result proves that the three dimensions in student management have significant discriminate validity.

CONCLUSION

In this paper, the author analyzes the three dimensions of student management as management object, management theory and management experience. Then, the author makes empirical analysis by using exploratory factor method, the

result shows that the cumulative variance contribution rate is 68.7% and prove that these three factors has strong explanation ability in student management. From the reliability test, the result shows that cronbach's alpha of these three dimensions are 0.9072, 0.8472 and 0.8116, and all the correlation is greater than 0.5. It proves that the initial scale has good internal consistency and reliability. Finally, we want to give out some policy suggestions as: First, strengthen the cognitive level for students' management, ensure every college counselor knows the students' essence and characteristic; second, provide more knowledge and skills training for the college counselor; finally, provide more opportunities for exchange, help college counselor constantly reflection about the previous work.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflict of interest.

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