

Study on the Status of International Students' Satisfaction with the Quality of Higher Education Service

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Abstract—the research designed a survey and took a college in Nanjing as the cases to evaluate the international student satisfaction of higher education service quality. Survey results show that students are not satisfied with the overall service quality of higher education. Study finds 6 factors influencing student satisfaction in descending order are College reputation, Campus environment, Academic quality, teaching facilities, Logistics service and teacher troop. Eight variables have significant gender differences. Professional has no significant impact on overall satisfaction while grade have significant impact on overall satisfaction.

Keywords—service quality, student satisfaction, factor analysis, gender difference

I. INTRODUCTION

With the development of the global economic, China's higher education has been increasingly competitive. Various studies have focused on the role of quality in higher education in order to become competitive in the global arena (Aldridge & Rowley, 1998; Athiyaman, 1997; Moogan, Baron, & Bainbridge, 2001; Oldfield & Baron, 2000)^{[1][2][3][4]}. Continuous improvement of existing standards and increased students' satisfaction has been key issues in service quality at higher educational institutions in China. Both levels of satisfaction and perception of quality will likely determine students' retention at higher education institutions. Enhancing educational value is to expend effort on continuous improvement, focus on stakeholders' interests and to increase students' satisfaction which is often used to assess quality of education. The purpose of this study is to investigate the predication of international students' satisfaction with their university, including the role that gender differences play. The study examines some of the criteria used by students (including service quality, the trust in the management of the institution and their perception of the management's readiness to change) when choosing or evaluating a tertiary institution in China.

In many other countries, there are many researches about the students' satisfaction. The American Heritage Dictionary (1982)^[5] defines satisfaction as the "the fulfillment or gratification of a desire, need, or appetite", Kotler and Clarke (1987)^[6] defines satisfaction as the desirous outcome of a task

or job that pleases one's esteem., Schreiner & Juillerat, (1994)^[7] defined student satisfaction as "when expectations are met or exceeded by the student's perception of the campus reality. Sweeney and Ingram (2001)^[8] define student satisfaction as "The perception of enjoyment and accomplishment in the learning environment".

"Evaluation of student satisfaction of internal performance of universities helps higher education institutions to identify what makes them distinctive and discover critical areas that have less satisfying and need to be improved to meet student expectations. Addressing the demands and needs of students is critical for higher educational institutions.

In China, some researchers such as Fang Baojun (2010)^[9] defined the quality of teaching is the sum of teaching standards and its practice effect. Student's satisfaction is the important reference standard to access the teaching quality. Yang Lanfang (2011)^[10] finds principal factors influencing student satisfaction in descending order are professional curriculum, campus culture, faculty, practical innovation, logistics service, supplementary facilities.

The purpose of this study is the determination of factors affecting international student satisfaction of Chinese university. To complete this purpose, the research question regarding the factor structure for the SSI will be answered: Which factors have more affective impact on student satisfaction in University?

II. METHODOLOGY

A. The sample framework

The Student Satisfaction was based on survey data gathered (summer 2014) from students attending one college. All respondents in this survey completed the same questionnaire. The questionnaires were distributed to randomly selected students in pre-determined classes. A total sample of 1000 students was randomly selected in class context at the university in China, and 883 valid questionnaires were recycled. The sample comprised of 19.1 percent female students.

B. Measuring instrument and reliability

Information about specific aspects of service quality in HE. The list of items developed to measure service quality in HE was based on an extensive literature research and the findings of preliminary focus groups consisting of students and lecturers. Adopting an approach similar to the SERVQUAL methodology and the importance-performance technique (Martilla & James, 1977)^[11], students were asked about the importance (I) (rated on a 5-point Likert-type scale from 'very important' to 'not important at all'), as well as the perceived experiences (P) (rated on a 5-point Likert-type scale from 'excellent' to 'not good at all') for each of the 52 items on the scale. The resulting instrument, a structured questionnaire, included several variables related to service quality at higher educational institutions – the service quality scale (De Jager & Gbadamosi, 2009)^[12]. In this sample, the 6 scales performed very well in terms of reliability, with obtained Cronbach's alpha ranging from .752 to .935 (details are provided in table3).

III. DATE ANALYSIS AND FINDINGS

Overall, respondents were 19.1 percent female, 12 percent were in their first year, 43.7 percent were in their second year,

Service quality in HE: In this study the 6 factors from the scale by De Jager and Gbadamosi (2009) were used to obtain 29.5 percent were in their third year, 20 percent were within the 18–19 years. Aeronautical Engineering were 166(19.9%), Mechanical Engineering were 140(16.8%), Software Engineering and Technology were 298(35.8%) and International Business were 229(27.5%).

A. Factor analysis of the students satisfaction

Factor analysis was used as a date reduction tool and as a technique to establish some construct validity for the measure of service quality in higher education. Before the factor analysis, we should have a Bartlett Test of sphericity, KMO were 0.931, Sig were 0.000. The principal components analysis method was used for initial factor extraction and Varimax rotation was applied. Seven items were redundant and thus eliminated from further analysis. Six factors were identified as key dimensions of service quality in higher education. These factors were named as indicated in Table 1. Items selected with factor loading greater than 0.5 for each factor. Factors were extracted with eigenvalue greater than 2. Total variation was 65.841 and Factor 1 account for 19.639% of total variance. Stevens(1986)Lawley & Maxwell (1971)noted that it is acceptable if the total variance higher than 60%.

TABLE I. FACTOR ANALYSIS OF THE HIGHER EDUCATION SCALE

item	Factors---perception of service quality					
	1	2	3	4	5	6
Factor1: College reputation						
College reputation compared with other college in same level	.725					
professional knowledge	.679					
ability and quality	.674					
happiness during learning	.669					
choose again or not	.662					
College reputation compared with other engineering college	.661					
future employment	.654					
features of university's education	.651					
overall education quality	.605					
overall image of college	.595					
teachers	.523					
Factor2: Campus environment						
employment information		.728				
Psychological counseling		.697				
academic exchanges/ academic activities		.683				
Complain system		.671				
Patency of expressing opinions		.620				
Timeliness of getting help		.585				
Communication between counselors and students		.512				
Factor3: Academic quality						
Atmosphere for learning and overall mood of campus			.792			
Safety of campus environment			.723			
Academic atmosphere			.683			
Elegance of campus environment			.676			
Factor4: Teaching facilities						
Quality and price of meals				.604		
The adequacy of classrooms				.554		
Completeness of teaching equipment				.536		
Rationality of courses arrangement				.536		
Factor5: Logistics service						
Completeness and convenience of dormitory facilities					.745	
Service attitude of dormitory management and logistics staff?					.692	
Completeness and Implementation of Regulation					.557	
Factor6: teacher troop						
Language and expression skills of teachers						.555
Diversity of teaching methods						.550
education service according to students' individualized development						.500

Notes: Rotation converged in 13 iterations; extraction method: principal component analysis; rotation method: Varimax with Kaiser Normalization; factor loadings below 0.5 are suppressed for the purpose of analysis.

TABLE II. FACTORS' EIGENVALUE AND THE VARIANCE CONTRIBUTION RATE

Factor	eigenvalue	Amount of variance explained (%)	The cumulative variance explained (%)	The variance contribution rate (%)
College reputation	7.659	19.639	19.639	29.83
Campus environment	5.274	13.522	33.161	20.54
Academic quality	3.985	10.218	43.379	15.52
Teaching facilities	3.279	8.407	51.786	12.77
Logistics service	3.183	8.162	59.948	12.39
teacher troop	2.298	5.893	65.841	8.95

B. The reliability test

Cronbach's alpha is used as an estimate of the reliability of a psychometric test. The alpha of College reputation is about 0.94, Campus environment is 0.91, Academic quality is 0.82,

Teaching facilities is 0.75, Logistics service is 0.78, and teacher troop is 0.82. It is interesting to note that the alpha of all the six factors is above 0.7 which indicated that the test is an acceptable test.

TABLE III. MEAN, VARIANCE AND CRONBACH'S ALPHA OF STUDY VARIABLES

S/N	Study variables	No. of items	Mean	variance	Alpha
1	College reputation	11	3.395	1.055	0.935
2	Campus environment	7	3.039	1.182	0.907
3	Academic quality	4	3.589	1.089	0.817
4	Teaching facilities	4	3.484	0.961	0.752
5	Logistics service	3	2.772	0.291	0.770
6	teacher troop	3	3.197	0.966	0.815
7	overall satisfaction	1	2.81	1.521	—

Note Items *(1-6) are the named factors for service quality scale in higher education

C. students basic characteristics impact on overall satisfaction

1) Gender differences in students' satisfaction

The findings relating to gender differences among students across the university are presented in this section. Independent samples t-tests were conducted to examine gender differences across all study variables – Table4. Significant gender differences were found with the following variables: dormitory facilities, sports and entertainment facilities, courses arrangement, courses arrangement, administrative

staff, College reputation, recommend the school to relatives, Overall expectation. Satisfaction of your college compared with your former expectation. The sports and entertainment facilities and sports and entertainment facilities and courses arrangement and administrative staff of the university are significantly more important for males than females. Male students more than the females significantly recommend the school to relatives, the female students were, however, significantly more expected overall with their university than the males.

TABLE IV. INDEPENDENT SAMPLES TEST (GENDER DIFFERENCES)

Study variables	Male		Female		Levene's Test for Equality of variance		t-Test for equality of means		
	Mean	SD	Mean	SD	F	Sig	t	df	Sig(2-tailed)
Q6	2.28	1.181	1.82	1.193	.051	.822	2.041	831	.043
Q7	3.64	.988	2.97	1.218	.865	.353	3.414	831	.001
Q12	3.39	.925	2.76	.987	.005	.943	3.559	831	.000
Q16	3.39	1.085	2.88	1.149	.000	.995	2.472	831	.014
Q34	3.46	1.035	2.97	1.141	.427	.514	2.448	831	.015
Q40	3.34	1.217	2.76	1.519	6.266	.013	2.375	831	.019
Q50	3.72	.953	4.32	.589	9.671	.002	-3.546	831	.000
Q56	3.20	1.065	2.74	1.238	3.315	.070	2.227	831	.027

2) Professional differences in students' satisfaction

Nonparametric test were conducted to examine the influence of different professional on overall satisfaction, in table 5, we can see the professional χ^2 equal to 6.838, and Concomitant probability equal

to 0.077 which is greater than 0.05, so Professional have no significant impact on overall satisfaction.

TABLE V. PROFESSIONAL AND GRADE DIFFERENCES IN STUDENTS' SATISFACTION

Grouping variable	χ^2	Df	progressive significance
professional	6.838	3	.077
Grade	56.723	3	.000

3) Grade differences in students' satisfaction

Nonparametric test were also conducted to examine the influence of different grade on overall satisfaction. ,we can see the grade χ^2 equal to 56.723,and Concomitant probability equal to 0.000 which is less than 0.05, so grade have significant impact on overall satisfaction.

IV. CONCLUSION

In this paper, we have attempted to identify the major predictors of students' satisfaction with their university and the role that perception of service quality, gender differences plays in these. Firstly, Perception of service quality was assessed by 6 factors of which is College reputation, Campus environment, Academic quality, Teaching facilities, Logistics service and teacher troop. Secondly, Significant gender differences were found with the following variables: dormitory facilities; sports and entertainment facilities courses arrangement courses arrangement administrative staff College reputation recommend the school to relatives Overall expectation Satisfaction of your college compared with your former expectation. Finally, Professional has no significant impact on overall satisfaction while grade have.

According to the conclusion, we could make some suggestions. Firstly, we could adjust the schedule about the content of the course and the professional, adapting to the social development and meeting the demand of students' employment. The variance contribution of professional course is about 30%, and it is the largest in all the factors'. The results fully reflect that it can't meet the demand of vocational students in major setting and curriculum management. The university should know more about the demands of the students and make some adjustment. Secondly, university should improve the living dormitory management system and the democratic management concept. It can largely enhance the satisfaction of male students if the university improves the dormitory facilities and sports and recreational facilities. Compared with women, men are lower in overall expectation, and men are easier to be satisfied. Thirdly, it exists difference in different grade; the university should pay more attention to the third grade.

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