

## An Investigation on the Reform of Heterogeneous Education

---How Family Backgrounds Influence Student Satisfaction with University Service

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**Abstract**—This paper bases on a survey conducted in 16 colleges and universities in Beijing, China. We use a modified SSI questionnaire with characteristics of both students and their schools carefully assessed and establish large sample database. Our research finds that family backgrounds have magnificent influence on all dimensions of student satisfaction and better backgrounds lead to higher satisfaction.

**Keywords**-Satisfaction; University Service; Questionnaire; Family Background; Analysis of Heterogeneity.

### I. INTRODUCTION

As the degree of the marketization of higher education goes deeper, student satisfaction with the university service has become one of those factors that draws high attention of China's government and universities. According to some advanced ideas of education, the process of student satisfaction assessment is an efficient way to ensure the vitality of the universities and a good manner to promote the continuous increase of the quality of university service [1] and to serve as references for government to make relevant policies.

The earliest study on student satisfaction with university service had its origin in the United States [3]. In 1966, the American Council on Education employed CIRP (Cooperative Institutional Research Program) to measure the satisfaction of the freshmen. Nowadays, there are several questionnaires [2] in common use, CSEQ, CSXQ and ESS, to name but three. The most influential, however, is SSI developed by Noel-Levitz, Inc. in 1999. From then on, it has evolved into a mature system and has profound theoretical foundation.

In the course of questionnaire design, we picked up 16 universities to conduct our survey. To fully reveal the true nature of our respondents, the questionnaire is carefully modified, emphasizing the characteristics of students and universities in China as different from those of the United States. In so doing, we are able to establish a relatively larger sample database and to study the influence of family backgrounds on student satisfaction, which will yield positive result for the improvement of the university service in Beijing and national wide.

### II. THE GENERAL OUTLINE OF THE SURVEY

#### 1. Questionnaire

The questionnaire [2] is designed in accord with the system of factors in satisfaction assessment of the college students' educational consumption. The questions are based on SSI questionnaire but with modification in consideration of the characteristics of universities in Beijing. There are five first-class dimensions defined: Perceived Quality, Perceived Value, Student Satisfaction, College Image, Student Loyalty and seven second-class dimensions under Perceived Quality: Campus Climate, Campus Facility, Instructional Level, Course Design, Student Discipline, Campus Services, Students' Support. The questionnaire consists of 52 items, including six concerning personal information, i.e. grade, gender, family monthly income et al. The items are Likert-type statements on a seven-point scale ranging from (1) "Not Important At All" or "Not satisfied At All" to (7) "Very Important" or "Very Satisfied" [4-10].

#### 2. Sample

The survey employed the method of stratified sampling. We sent 2200 copies in 16 universities in Beijing and collected 2053 copies. The response rate is 93.3% and valid response rate is 92.3% (1894 copies of valid questionnaires). 40.6% (769) of the valid respondent are male and 58.8% (1114) came from urban areas.

### III. THE INFLUENCE OF FAMILY BACKGROUNDS ON STUDENT SATISFACTION

Students' family backgrounds are indicated by three items in personal information, i.e. family monthly income, educational level of parents, coming from urban or rural areas. We used variance analysis to study the influence of the demographic statistical characteristics on student satisfaction. If significance level  $<0.05$  (or F statistic  $>1$ ), then demographic statistical characteristics influence satisfaction.

#### 1. Family Monthly Income

From Table 1, we know that Family Monthly Income has greater influence on factors such as Campus Climate,

Campus Facility, Campus Services, Student Satisfaction, Student Loyalty, College Image and higher income indicates higher satisfaction. Further exploration of the seven second-class dimensions shows that Campus Climate, Campus Facility and Campus Services, all of which reflect the ability for the universities to provide good living conditions, have greater significance level, while the other four, relating to the inner power of the universities, have less significance level.

A possible explanation for this result is that students from families with higher income can satisfy himself by improve his living condition through the first three factors, while those poor has to balance his quality of life with his income and cannot fully make use of the services provided by the universities.

Table 1. Family Monthly Income

Dimensions	F	Significance	Family Monthly Income	Mean Value	Dimensions	F	Significance	Family Monthly Income	Mean Value
Campus Climate	13.281	0.000**	0-3000RMB	4.804	Campus Facility	14.520	0.000**	0-3000RMB	4.054
			3001-6000RMB	4.887				3001-6000RMB	4.197
			6001-10000RMB	5.031				6001-10000RMB	4.214
			10000RMB-	5.290				10000RMB-	4.647
Instructional Level	5.546	0.001*	0-3000RMB	4.733	Course Design	3.348	0.018*	0-3000RMB	4.714
			3001-6000RMB	4.886				3001-6000RMB	4.8919
			6001-10000RMB	4.917				6001-10000RMB	4.894
			10000RMB-	5.043				10000RMB-	4.908
Student Discipline	2.480	0.059*	0-3000RMB	4.643	Campus Services	7.168	0.000**	0-3000RMB	4.406
			3001-6000RMB	4.780				3001-6000RMB	4.474
			6001-10000RMB	4.799				6001-10000RMB	4.476
			10000RMB-	4.795				10000RMB-	4.745
Students Support	4.101	0.007*	0-3000RMB	4.505	Perceived Value	2.707	0.044*	0-3000RMB	4.376
			3001-6000RMB	4.669				3001-6000RMB	4.569
			6001-10000RMB	4.630				6001-10000RMB	4.579
			10000RMB-	4.751				10000RMB-	4.633
Student Satisfaction	7.538	0.000**	0-3000RMB	4.330	Student Loyalty	6.864	0.000**	0-3000RMB	4.213
			3001-6000RMB	4.638				3001-6000RMB	4.495
			6001-10000RMB	4.612				6001-10000RMB	4.500
			10000RMB-	4.749				10000RMB-	4.668
College Image	12.485	0.000**	0-3000RMB	4.567					
			3001-6000RMB	4.813					
			6001-10000RMB	4.964					
			10000RMB-	5.115					

## 2. Coming from Urban or Rural Areas

Whether the students come from Urban or Rural Areas has some influence on student satisfaction. From Table 2, it can be said that the factor has non-significant impact on Campus Services, Perceived Value and Student Loyalty, but

has significant influence on Instructional Level and Students' Support. What's more, students from urban areas have higher satisfaction than those from rural areas. And in those factors that are significantly influenced, Instructional Level has the opposite property: students from urban areas have

lower mean value, 4.859 compared to 4.891 of the students from rural areas.

Table 2. Students Coming from Urban or Rural Areas

Dimensions	F	Significance	Rural/Urban	Mean Value	Dimensions	F	Significance	Rural/Urban	Mean Value
Campus Climate	3.199	0.074*	Rural	4.644	Campus Facility	4.309	0.038*	Rural	3.925
			Urban	5.170				Urban	4.433
Instructional Level	17.093	0.000**	Rural	4.891	Course Design	10.519	0.001*	Rural	4.799
			Urban	4.859				Urban	4.877
Student Discipline	10.008	0.002*	Rural	4.706	Campus Services	0.341	0.560	Rural	4.496
			Urban	4.777				Urban	4.492
Students Support	21.051	0.000**	Rural	4.482	Perceived Value	0.064	0.800	Rural	4.385
			Urban	4.726				Urban	4.625
Student Satisfaction	1.760	0.185*	Rural	4.365	Student Loyalty	0.260	0.610	Rural	4.294
			Urban	4.698				Urban	4.543
College Image	1.318	0.251*	Rural	4.750					
			Urban	4.870					

### 3. Educational Level of Parents

The educational Level of father and that of mother have the consistent influence on student satisfaction as revealed in Table 3. Campus Climate, Course Design, Student Satisfaction are highly influenced by the factor, while Campus Services receives non-significant influence. Other

factors are correlated with Educational Level of Parents and higher educational level result in higher satisfaction. Moreover, the Educational Level of Mother has little influence on Student Loyalty, in opposition to that of father on the latter, but since F statistic is 0.906, a number slight smaller than 1, the inconsistency can be ignored.

Table 3. Educational Level of Parents

Dimensions	Parents	F	Significance	Mean Value				
				Primary School	Middle School	High School	Undergraduate	Graduate
Campus Climate	Father	6.799	0.000**	4.754	4.862	4.841	5.069	5.168
	Mother	7.251	0.000**	4.792	4.898	4.838	5.103	5.183
Campus Facility	Father	3.017	0.017*	3.960	4.183	4.169	4.330	4.257
	Mother	2.853	0.023*	4.011	4.263	4.175	4.313	4.266
Instructional Level	Father	3.847	0.004*	4.723	4.770	4.844	4.997	4.813
	Mother	4.722	0.001*	4.604	4.903	4.892	4.952	4.773
Course Design	Father	5.824	0.000**	4.782	4.722	4.808	4.849	5.174
	Mother	8.575	0.000**	4.678	4.643	4.860	4.934	5.201
Student Discipline	Father	1.758	0.135*	4.789	4.671	4.702	4.780	4.881
	Mother	2.953	0.019*	4.597	4.689	4.740	4.803	4.941
Campus Services	Father	0.647	0.629	4.587	4.449	4.468	4.508	4.537
	Mother	0.349	0.845	4.454	4.488	4.507	4.480	4.574
Students Support	Father	3.848	0.004*	4.605	4.498	4.613	4.639	4.850
	Mother	4.700	0.001*	4.451	4.545	4.630	4.675	4.894
Perceived Value	Father	3.394	0.009*	4.655	4.360	4.439	4.669	4.524
	Mother	1.130	0.341*	4.353	4.514	4.544	4.591	4.470

Student Satisfaction	Father	4.918	0.001*	4.539	4.380	4.504	4.609	4.888
	Mother	5.933	0.000**	4.479	4.419	4.493	4.634	5.040
Student Loyalty	Father	3.016	0.017*	4.336	4.344	4.324	4.577	4.545
	Mother	0.906	0.459	4.345	4.424	4.391	4.499	4.576
College Image	Father	4.190	0.002*	4.632	4.719	4.719	4.977	4.874
	Mother	1.011	0.400*	4.725	4.751	4.815	4.897	4.828

#### IV. CONCLUSION

Our study shows that family backgrounds have significant influence on all the dimensions of student satisfaction and there exists positive correlation between family backgrounds and student satisfaction: better family backgrounds result in higher satisfaction. Three tentative explanations can be proposed to illustrate it. Firstly, facing the lack in higher education services, students of better family backgrounds have more ways to tackle the problem efficiently. Secondly, these students can choose better ones when confronted with heterogeneous services, for example, food in the cafeteria. Lastly, students of normal family background usually have higher expectation before entering into the university, and more easily have negative attitude, caused by the gap between the fact and that expectation, towards the university. Thus, to improve the general satisfaction of the students, government and universities should take serious steps to help the students from poor families and remote areas.

#### ACKNOWLEDGMENTS

The authors would like to thank Tao Jiang and Yilong Gao for their useful discussions. This work is supported by the 2010 Youth Research Project of National Education Science "eleven five" planning under Grant No. CIA100160.

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