An Empirical Analysis of the Satisfaction to the Government on Rural Vocational Education Based on CSI Model

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Keywords: CSI model; rural vocational education; satisfaction

Abstract: The paper did an empirical analysis of the satisfaction to the government on the supply of rural vocational education. The results show that in recent years, by vigorously developing rural vocational education, the overall satisfaction to the government's rural vocational education supply has reached a relatively high level.

1. Introduction

CSI (Customer Satisfaction Index) is a new economic Index used in many countries, which is mainly used to evaluate the quality of economic output. It is also a very hot and frontier topic in the field of quality and economy in China. Since the 1990s, many countries have carried out the test and assessment of CSI to improve the competitiveness of their enterprises. Sweden was the first to establish a national customer satisfaction index in 1989, known as SCSB (Swedish customer satisfaction barometer). Since then, the United States and the European Union have successively established their own customer satisfaction indexes -- ACSI (American customer satisfaction index, 1994) and ECSI (European customer satisfaction index, 1999). In addition, countries such as New Zealand, Canada and the Taiwan region have also established customer satisfaction indexes in several important industries. CSI model (customer satisfaction index model) is a mathematical model of statistical index reward quantified by customer satisfaction, aiming to reflect the differences between customers' expectation of products or services and their actual feelings.

Jincheng Wu (2011) organized a questionnaire survey on the supply and demand of farmers' education from February to March 2010 in Ruijin city of Jiangxi province, Changyi city of Shandong province, Xinzheng city of Henan province, Anxi county, Datian county, Huian county and Xianyou county of Fujian province. It shows that it needs to take both suppliers and demanders into consideration when judging the performance of the supply and demand of the farmers' education. Speaking of supply, it requires not only a large amount of input gross, but also the average. It requires not only a large amount of input on material resources, but also a high organizational efficiency. It requires not only the self-evaluation of suppliers, but also the satisfaction of farmers. More importantly, it is important to know whether education plays a role in the development of rural society. Through a large number of questionnaire survey data of rural households, Chongtie Zhao (2011) found that factors such as gender, age, residence, occupation, family income and proportion of family education expenditure in household consumption expenditure have significant influences on the decision-making behaviors for rural households' children in secondary vocational education. Comparatively, the influence of education level is not significant. Between December 2013 and February 2014, Qiaoyan Pan (2014) studied the supply efficiency of farmer education in Fujian province through 557 survey data and found that efficiency is one of the important standards to measure the quality of farmers' education supply behaviors. Also, the equilibrium of supply and demand is the largest supply efficiency of farmers' education.

According to the above literature review, the application of customer satisfaction theory to measure rural vocational education satisfaction is recognized by many domestic scholars. The above literature are of great significance for further study on the evaluation of the supply efficiency of government rural vocational education. However, in the existing literature, few scholars have conducted thematic studies on the satisfaction of rural vocational education of governments in several provinces and autonomous regions. Most scholars mainly studied the satisfaction of rural

  DOI: 10.25236/icrtpe.2019.128

vocational education in a certain province. Therefore, this paper, mainly based on the theory of customer satisfaction, makes an empirical analysis of the government's rural vocational education supply satisfaction and its influencing factors in three regions of the east, the central and the west of China(data collected from the east-Fujian province, the central-Hunan province and the west-Guangxi Zhuang autonomous region), so as to provide theoretical and practical basis for the improvement of the government's rural vocational education supply efficiency.

2. The Analysis of the Reliability and Validity of Questionnaires

The data used in this empirical analysis come from the micro survey of government satisfaction with rural vocational education supply from May to June 2019 in 9 sample districts and counties including Shaxian county, Yanping district and Changting county of Sanming city in fujian province; Guanyang county, Pingle county and Quanzhou county of Guangxi Zhuang autonomous region; Guidong county, Lanshan county and Ningxiang county of Hunan province. The 875 questionnaires were imported into the software SPSS24, and the reliability and validity were tested according to the data distribution of Fujian, Guangxi and Hunan provinces.

Firstly, the KMO of the questionnaire were calculated, and the results are shown in Table 1. The KMO (kaiser-meyer-olkin) statistics of the overall and the partial correlation of test variables in Fujian, Guangxi Zhuang and Hunan provinces and autonomous regions are 0.979, 0.973, 0.966 and 0.972. It can be considered that the correlation degree differences between variables are small. That is to say, the reliability of data is good and suiTable for factor analysis.

Table 1 The KMO of The Questionnaires

Item	Overall	Fujian	Guangxi Zhuang autonomous region	Hunan
KMO	0.979	0.973	0.966	0.972

Meanwhile, the Bartlett sphericity test was carried out, and the results are shown in Table 2. The Bartlett statistics values are relatively large among the overall and Fujian, Guangxi, Hunan. The corresponding associated probability values are also less than 0.05 which rejected the Bartlett's spherical hypothesis. It also determined that the correlation coefficient matrix cannot be the identity matrix. The data from the questionnaires passed the validity test, and it is also suiTable for factor analysis.

Table 2 The Bartlett Sphericity Test of The Questionnaires

Item	Overall	Fujian	Guangxi Zhuang autonomous region	Hunan
Approximate chi-square	30638.896	9637.376	7716.102	13962.634
Degree of freedom	325	325	325	325
Saliency	0	0	0	0

3. Descriptive Statistical Analysis

The survey of personal characteristics includes gender, age, education and family size. This part will mainly introduce the distribution of the four characteristics mentioned above in the questionnaires, and test whether there are differences in the satisfaction of government rural vocational education supply among the respondents with different types of characteristics through analysis of variance.

3.1 Gender

Among the respondents, 433 of them are women, accounting for 49.49% of the total. Male respondents are 442, accounting for 50.51% of the total. The variance analysis of gender item was conducted by EXCEL, and the results are shown in Table 3. According to the results of Table 3, the variance test of gender item of all respondents accepted the null hypothesis, indicating that respondents of different genders have significant differences in their perception of satisfaction with

the government rural vocational education supply.

Table 3 Results of One-way Variance Analysis of Gender

SUMMARY						
Group	Numbers of observation	Summation	Average	Variance		
Gender	875	442	0.505143	0.25026		
Satisfaction evaluation	875	3381	3.864	1.305281		
Variance Analysis						
Source of variance	SS	df	MS	F	P-value	F crit
Inter-group	4935.841	1	4935.841	6346.14	0	3.846784
Intra-group	1359.543	1748	0.777771			
Total	6295.383	1749				

3.2 Age

There are 236 respondents under the age of 20 in this survey, accounting for 26.97% of the total number. There are 134 respondents aged from 20 to 30, accounting for 15.31% of the total. 161 respondents are aged from 30 and 40, accounting for 18.40% of the total. There are 244 respondents aged from 40 to 50, accounting for 27.89% of the total. 98 respondents are aged from 50 to 60, accounting for 11.20% of the total. 2 respondents are over 60 years old, accounting for 0.23% of the total. It can be seen that the age of respondents is mainly under 60 years old. The variance analysis of age item was conducted by EXCEL, and the results are shown in Table 4. According to the results of Table 4, the variance test of age item of all respondents accepted the null hypothesis, indicating that respondents of different ages have significant differences in their perception of satisfaction with the government rural vocational education supply.

Table 4 Results of One-way Variance Analysis of Gender

SUMMARY						
Group	Numbers of observation	Summation	Average	Variance		
Age	875	1590	1.817143	1.948218		
Satisfaction evaluation	875	3381	3.864	1.305281		
Variance Analysis						
Source of variance	SS	df	MS	F	P-value	F crit
Inter-group	1832.961	1	1832.961	1126.762	4.4E-191	3.846784
Intra-group	2843.559	1748	1.62675			
Total	4676.519	1749				

3.3 Education level

Among the respondents in this survey, 9 of them are under primary school education level, accounting for 1.03% of the total number. 70 respondents are with middle school education level, accounting for 8.00% of the total number. 225 respondents are with high school education level, accounting for 25.71% of the total. 151 respondents are with junior college education level, accounting for 17.26% of the total. 383 respondents are with bachelor degree, accounting for 43.77% of the total. 37 respondents are with master degree or above, accounting for 4.23% of the total. It can be seen that the education level of respondents is mainly undergraduate. The variance analysis of education level item was conducted by EXCEL, and the results are shown in Table 5. According to the results of Table 5, the variance test of education level item of all respondents accepted the null hypothesis, indicating that respondents of different education level have significant differences in their perception of satisfaction with the government rural vocational education supply.

Table 5 Results of One-way Variance Analysis of Education Level

SUMMARY						
Group	Numbers of observation	Summation	Average	Variance		
Education level	875	2690	3.074286	1.272507		
Satisfaction evaluation	875	3381	3.864	1.305281		
Variance Analysis						
Source of variance	SS	df	MS	F	P-value	F crit
Inter-group	272.8463	1	272.8463	211.6902	2.35E-45	3.846784
Intra-group	2252.987	1748	1.288894			
Total	2525.834	1749				

3.4 Family size

139 of the respondents have a family with 3 people or less, accounting for 15.89% of the total. There are 450 families with 3 to 4 members, accounting for 51.43% of the total. There are 241 families with 5 to 6 members, accounting for 27.54% of the total. 27 families have 7 to 8 members, accounting for 3.09% of the total. There are 18 families with more than 8 members, accounting for 2.06 percent of the total. It can be seen that the family size of the respondents is mainly between 3 and 4 people. The variance analysis of family size item was conducted by EXCEL, and the results are shown in Table 6. According to the results of Table 6, the variance test of family size item of all respondents accepted the null hypothesis, indicating that respondents with different family size have significant differences in their perception of satisfaction with the government rural vocational education supply.

Table 6 Results of One-way Variance Analysis of Family Size

SUMMARY						
Group	Numbers of observation	Summation	Average	Variance		
Family size	875	1085	1.24	0.686041		
Satisfaction evaluation	875	3381	3.864	1.305281		
Variance Analysis						
Source of variance	SS	df	MS	F	P-value	F crit
Inter-group	3012.352	1	3012.352	3025.479	0	3.846784
Intra-group	1740.416	1748	0.995661			
Total	4752.768	1749				

4. Overall Satisfaction Analysis of Government Rural Vocational Education Supply

According to the survey results of the overall satisfaction with the supply of rural vocational education in 875 questionnaires from 9 districts and counties, SPSS24 software can be used to calculate the average level of the overall satisfaction with the supply of rural vocational education in each district and counties, as shown in Table 7.

Table 7 Overall Satisfaction of Rural Vocational Education Supply

Area	Average level of overall satisfaction
Sanming of Fujian	4.24
Yanping of Fujian	3.66
Changting of Fujian	4.08
Guanyang of Guangxi	3.97
Pingle of Guangxi	3.57
Quanzhou of Guangxi	3.94
Guidong of Hunan	4.16
Lanshan of Hunan	3.60
Ningxiang of Hunan	3.73
Fujian province	3.99
Guangxi Zhuang autonomous region	3.86
Hunan province	3.79
Overall	3.86

4.1 The overall satisfaction of the government's rural vocational education supply is nearly 4 stars.

The degree of satisfaction is divided into five levels recorded as “1 star” to “5 stars”(written as 1-5). The more stars it shows, the higher the degree of satisfaction is. For example, “5” represents “5 stars”, indicating the highest degree of satisfaction, while “1” represents “1 star”, indicating the lowest degree of satisfaction. The average satisfaction level of the government's rural vocational education supply is 3.86, close to the 4-star level (shown as 4). Among the three sample provinces (autonomous regions), Fujian province has the highest average level of satisfaction, reaching 3.99, while Hunan province has the lowest average level of satisfaction, only 3.79. Among the 9 sample districts and counties, the average satisfaction level of 5 districts and counties such as Sanming of Fujian, Guidong of Hunan, Changting of Fujian, Guanyang of Guangxi and Quanzhou of Guangxi is higher than the overall average level. On the other hand, the average satisfaction level of 4 districts and counties such as Ningxiang of Hunan, Yanping of Fujian, Lanshan of Hunan and Pingle of Guangxi is lower than the overall average level. Therefore, the overall satisfaction of the government's rural vocational education supply is relatively high, exceeding the 3-star level.

4.2 The average level of overall satisfaction in Fujian province is slightly higher than that in Hunan province and Guangxi Zhuang autonomous region.

The overall satisfaction level of the government's rural vocational education supply in Fujian province is 3.99, which is the closest to the 4-star level. The average level in Guangxi Zhuang autonomous region is 3.86, slightly higher than the 3.79 in Hunan province. The overall satisfaction levels in all three provinces are between three and four stars. According to the average level of satisfaction of 9 sample districts and counties, the average levels of satisfaction of Sanming and Changting are higher than 4 out of the three districts and counties of Fujian province in this survey. Of the three districts and counties of Hunan province, only Guidong county has an average satisfaction level higher than 4. The average satisfaction levels of the three districts and counties of Guangxi Zhuang autonomous region are all lower than 4. It can be seen that the overall satisfaction of the government's rural vocational education supply in economically developed provinces is slightly higher than that in economically underdeveloped provinces, but the difference of the average satisfaction level among provinces is relatively small, and the overall satisfaction level is

still relatively high.

5. Conclusion

When investigating the problems existing in the government's rural vocational education supply, 57.37% of the respondents believe that the main problem of the government's rural vocational education supply lies in the insufficient attention paid to rural vocational education. 47.98% of the respondents believe that the main problem with the government's rural vocational education supply was insufficient financial input. 41.37% of the respondents believe that the main problem in the government's rural vocational education supply lies in the lack of hardware facilities in institutions for cultivating talents. 32.79% of the respondents believe that the main problem of the government's rural vocational education supply is the lack of manpower input. 37.13% of the respondents believe that the main problem with the government's supply of rural vocational education was the insufficient number of institutions to cultivate talents. 33.82% of the respondents believe that the main problem with the government's supply of rural vocational education is the uneven distribution of institutions for training talents. The above problems are objective problems in the supply of rural vocational education by the government, among which more than half of the respondents believe that the main problem in the supply of rural vocational education by the government lies in the intensity of attention to rural vocational education.

Acknowledgement

The “national education scientific planning” project, No. DFA160247.

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