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Achieving Satisfaction and Loyalty of Teacher Training Major Students in Chuxiong, China

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Abstract

Purpose: The aim of this study is to investigate the factors influencing the satisfaction and loyalty of teacher training major students in Chuxiong Normal University. The conceptual framework proposes causal relationships among academic aspect, reputation, service quality, facility, student satisfaction and student loyalty. **Research design, data and methodology:** The researcher used the quantitative method to distribute online questionnaires to 500 students of Chuxiong Normal University. The sampling techniques are judgment sampling, quota sampling, convenience sampling and snowball sampling. Before collecting the data, researcher ensured construct validity by using the index of item-objective congruence (IOC). Then, Cronbach's Alpha reliability test was carried out to validate internal consistency of constructs in the pilot test. The data were analyzed by confirmatory factor analysis (CFA) and structural equation modeling (SEM), including goodness of model fit, reliability and validity. **Results:** The results reveal that reputation, service quality and facility significant affect student satisfaction. Furthermore, student satisfaction has a significant impact on student loyalty. On the other hand, academic aspect has no significant impact on student satisfaction. **Conclusions:** Academic practitioners and university executives should improve student satisfaction and loyalty by promoting good reputation and evaluating the efficiency of academic program, service and facility.

Keywords : Academic Aspect, Reputation, Service Quality, Student Satisfaction, Student Loyalty

JEL Classification Code: E44, F31, F37, G15

1. Introduction

With the rapid development of China's economy, China's higher education has been growing, which means more and more people have the opportunity to study or continue their education in the university level. In 2022, the number of college graduates in China was close to 11

million, and the number of college graduates is expected to increase every year (Pike, 2022). However, universities' facilities, skillset of faculty members and service quality are the challenges. At present, the quality of education in China cannot meet the needs of students. The rise of market competition forces university leaders and administrators to realize that if they want to run a school successfully, they

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must attract more enrollment, especially from the group of outstanding students, and must determine higher student satisfaction and loyalty (Hui, 2011). In the context of this study, there are the growing demand of teacher and lecturer career in the labor market, responding to the expansion of education sector in China. Teacher training major students will become primary and secondary school teachers in the future. The quality of normal university directly determines the quality of the basic education in the future, the quality and level of China's future talent training, and even the future development of China. Therefore, it is very important to improve the satisfaction and loyalty of teacher training major students (OECD, 2016).

Satisfaction and loyalty have been widely investigated in the service sector and is often expressed as customer satisfaction or customer loyalty. It is a relative concept which is the degree to which customer expectations match customer experience (Strenitzerová & Gaña, 2018). Later, many scholars have been examining student satisfaction in the various field of research. Most universities in the world have been taken the satisfaction and loyalty of students as an important index to evaluate the school performance and its competitive advantage. The United States is the first country in the world to conduct a survey of student satisfaction and loyalty. It has been practiced for more than half a century (Song, 2022). Its measuring method and dimension are worth learning and using for reference. Therefore, it raises importance of this study on the student satisfaction and loyalty for better improvement of educational service.

2. Literature Review

2.1 Student Loyalty

Student loyalty is the degree to which students' liking and satisfaction to their own school. Generally, the more prominent the school brand affects the higher the loyalty of the students (Song, 2022). The degree of loyalty is whether a person can accept the goals and common values of the organization; whether he or she aspires to be part of the organization and is proud of it; and whether he or she is willing to put in more effort and affection for the organization. Even in the face of difficulties in the organization, loyal people stick together to tide over the difficulties. A higher degree of satisfaction can also increase students' loyalty. Students who are loyal will recommend others to enroll or study at the school, and they will also continue to study in other program or higher degree per the accepted conditions (Tweephoncharoen & Vongurai, 2020).

2.2 Academic Aspect

Academic aspect refers to mathematical logic, language proficiency, creativity and analytical ability. In the academic aspect, the most important is to enhance the academic level, strengthen the academic atmosphere and uplift the academic training (Pham et al., 2022). As the quality of service and student satisfaction are vital for the survival of a university in the educational market, many studies have intensely put the attention to academic aspect quality in higher education institutions (De Santini et al., 2017). Academic aspects are related to "learning actions carried out by students within the academic realm which includes educational background, students' performance in class as well as the influence of teachers." (Herrera-Mosquera & Tovar-Perdomo, 2017). Pham et al. (2022) found that academic aspect significantly relates to student satisfaction. Therefore, the hypothesis is developed per below:

H1: Academic aspect has a significant impact on student satisfaction.

2.3 Reputation

Reputation is the comprehensive judgment of one party on the other party's long-term behavior. Reputation is not temporary but it is a collection of data or evaluation over time. Reputation means a person relates to another person who has credible characteristics or attributes, and often representing a prediction of possible future behavior (Wilson & Grimlund, 1990). Reputation is a collection of historical information, which usually requires a subject to maintain consistency of behavior over a long period of time. A firm's reputation can determine its position in the industry. A good reputation can make a firm stand out from its competitors, while a bad reputation can make a firm go bankrupt. Therefore, more and more scholars begin to study how to build a good reputation. A good corporate reputation can probably increase market share and competitive advantages (Shapiro, 1983). Reputation is when customers trust products, employees and candidates love the quality of human resources, investors trust to provide sources of funds. Reputation is the value that increases over time. To build a good corporate reputation, universities have to carry out a series of projects to explore how to influence the student satisfaction (Ali et al., 2016). Hence, this study can be hypothesized that:

H2: Reputation has a significant impact on student satisfaction.

2.4 Service Quality

Rust and Oliver (1994) denoted that service quality is defined by delivery quality and environmental quality. Dabholkar et al. (1996) conducted an empirical study of the service quality in retail industry and found that service quality is a general perception of the what is paid and what is given. Brady and Cronin (2001) integrated the viewpoints of different schools that service quality should be further concertized and modified appropriately. There are three hierarchical models of interactive quality, environmental quality and output quality. The variety of literatures have conducted SERVQUAL which is a measurement instrument for measuring the quality in services (Kassim & Abdullah, 2010; Lee et al., 2011; Naik, et al., 2010; Parasuraman et al., 1988). In the research of different sectors in the service industry, a variety of aspects were explored which can be considered. The service quality is based on customers point of view which can drive satisfaction and dissatisfaction (Parasuraman et al., 1988). In the context of this study, service quality in educational service has a significant impact on student satisfaction per a following hypothesis:
H3: Service quality has a significant impact on student satisfaction.

2.5 Facility

With the continuous enhancement of China's economic growth and the further implementation of the strategy to rejuvenate the country through science and education, the state has increased the investment and policies in colleges and universities (OECD, 2016). In order to ensure the quality of teaching to improve the practical ability of students to adapt to the society and provide them with the opportunity to carry out scientific research, all colleges and universities raise funds to develop modern laboratory and teaching and scientific research facilities (Wang et al., 2011). Bin (2002) pointed out that facilities are generally referred to tangible goods and assets, including buildings, facilities and equipment. Song (2022) confirmed the connection between facilities and satisfaction. Facilities are viewed as physical assets of the school environment which has the strongest impact on student satisfaction (Le et al., 2021). Based on the above discussions, this research hypothesized that:

H4: Facility has a significant impact on student satisfaction.

2.6 Student Satisfaction

Student satisfaction is an important dimension to measure the effect and quality of education. It offers great significance to explore the needs of students, evaluate the effect and quality of education, and determine how to

improve educational system and teaching quality (Alnaser & Almsafr, 2014). Student satisfaction is an important criterion for students to participate in the academic process, and to measure the quality of higher education. The quality of higher education should be the fundament to ensure the satisfaction of college students (Sultan & Wong, 2010). Student satisfaction is an important measure to evaluate the student loyalty. The higher satisfaction, the more loyalty of students is expressed in the form of referring the school to other people or continue their study in the same school (Chong & Ahmed, 2012). Song (2022) also found the strong link between student satisfaction and student loyalty in higher education. Accordingly, a hypothesis is developed:

H5: Student satisfaction has a significant impact on student loyalty.

3. Research Methods and Materials

3.1 Research Framework

The purpose of this study was to investigate the influencing factors of college student satisfaction and loyalty in Chuxiong, China, including academic aspect, reputation, service quality and facility. In addition, the study examined the causality between each variable to reveal the impact of these factors on satisfaction and loyalty. The conceptual framework is developed from four previous research frameworks. Firstly, Mang'unyi and Govender (2017) conducted a study of academic aspect and non-academic aspect, access, reputation and student satisfaction in private universities. Second, Chandra et al. (2019) emphasizes the influence of service quality, university image on student satisfaction and student loyalty. In the third study, Mallika Appuhamilage and Torii (2019) identified the impact of loyalty on the student satisfaction in higher education. Last, Marzo-Navarro et al. (2005) specified a new element of university management and student satisfaction. The conceptual framework of this study is proposed in Figure 1.

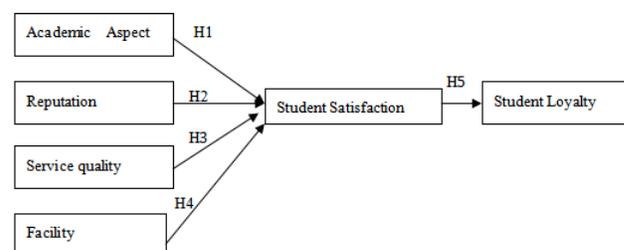


Figure 1: Conceptual Framework

3.2 Research Methodology

The researchers distributed online questionnaires to the target group, creating from “questionnaire star” which is an online-based software. This quantitative survey is divided into three parts. Firstly, the screening questions are used to identify the accurate characteristics of the participants. Secondly, a five-point Likert scale was applied to measure the six proposed variables, ranging from strongly disagree (1) to strongly agree (5). Finally, the demographic questions include gender, hometown and referral.

For content validity, Item Objective Congruence (IOC) Index is used for screening the item quality by three experts with the score ranging from 1 (can measure), 0 (unsure) and -1 (not measure). The results of IOC showed all items were approved at a score 0.6 or above. In pilot test, 30 participants were assessed to reserve all constructs at a score 0.7 or above (Nunnally & Bernstein, 1994), including academic aspect (0.781), reputation (0.883), service quality (0.956), facility (0.725), student satisfaction (0.934) and student loyalty (0.852). Afterwards, researcher used SPSS Amos to analyze the data by the confirmatory factor analysis (CFA) and structural equation modeling (SEM), including goodness of model fit, reliability and validity.

3.3 Population and Sample Size

The target populations are teacher-training major students of Chuxiong Normal University in Yunnan Province, China. The minimum sample size for structural equation models is suggested to be at least 200 respondents (Kline, 2011). The online survey was distributed to over 800 participants but 500 responses were received and passed the data screening.

3.4 Sampling Technique

The sampling techniques are judgmental sampling, quota sampling, convenience sampling and snowball sampling. For judgmental sampling, a research objective is to investigate teacher-training major students of Chuxiong Normal University. In 2022, the number of students at Chuxiong Normal University is 8,039. the quota sampling was carried out to allocate the sample size as shown in Table 1. In terms of convenience sampling, online surveys from the web-base of questionnaire star were distributed over a period of approximately four months from March to June 2022. Snowball sampling method was applied to promote students to share the survey link to their peers.

Table 1: Population and Sample Size by University

Grade (Teacher-training major)	Population Size	Proportional Sample Size (N=500)
Class of 2021	2454	153
Class of 2020	2309	144
Class of 2019	1694	105
Class of 2018	1582	98
Total	8039	500

Source: Academic Affairs Office of Chuxiong Normal University (2022)

4. Results and Discussion

4.1 Demographic Information

The demographic information of 500 respondents is shown in Table 2. The respondents are 192 males and 308 females, accounting for 38.4 percent and 61.6 percent respectively. 402 respondents (80.4 percent) are residents of Yunnan province where Chuxiong Normal University is located, and 98 respondents (19.6 percent) were from outside the province. Most respondents would refer the school to others of 91.8 percent while 8.2 percent of respondents would not.

Table 2: Demographic Profile

Demographic and General Data (n=500)		Frequency	Percentage
Gender	Male	192	38.4%
	Female	308	61.6%
Hometown	Inside Yunnan	402	80.4%
	Outside Yunnan	98	19.6%
Would you refer the school to others?	Yes	459	91.8%
	No	41	8.2%

4.2 Confirmatory Factor Analysis (CFA)

In this study, confirmatory factor analysis (CFA) was measured by Cronbach’s alpha reliability, factor loading, t value, average variance extraction (AVE) and composite reliability (CR). In Table 3, Cronbach’s alpha coefficient values are greater than 0.7 (Nunnally & Bernstein, 1994), therefore, the internal consistency of each item is confirmed and reliable. According to Fornell and Larcker (1981), factor loading of all loading items were greater than 0.50 and mostly were above 0.70, ranging from 0.570 to 0.888. The results of CR in this study were all higher than 0.7, ranging from 0.745 to 0.911. AVE were also greater than 0.4, ranging from 0.498 to 0.723. Thus, all estimates of CFA were significant.

Table 3: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Academic Aspect (AA)	Mang'unyi and Govender (2017)	5	0.871	0.609-0.832	0.874	0.584
Reputation (R)	Mang'unyi and Govender (2017)	3	0.741	0.570-0.768	0.745	0.498
Service Quality (SQ)	Chandra et al. (2019)	5	0.909	0.784-0.857	0.911	0.671
Facility (F)	Chandra et al. (2019)	3	0.767	0.676-0.750	0.768	0.526
Student Satisfaction (SS)	Marzo-Navarro et al. (2005)	4	0.909	0.781-0.888	0.912	0.723
Student loyalty (SL)	Marzo-Navarro et al. (2005)	4	0.856	0.711-0.864	0.855	0.598

The goodness of fit for the measurement model was measured by GFI, AGFI, NFI, CFI, TLI, and RMSEA. The model before the adjustment was not fit. Therefore, the model requires an adjustment to present the value within the criteria. In addition, convergence validity and discriminant validity were greater than the acceptable value of the study. Therefore, the validity of the following measurement model estimation was verified per Table 4.

Table 4: Goodness of Fit for Measurement Model

Index	Acceptable Values	Statistical Values Before Adjustment	Statistical Values After Adjustment
CMIN/DF	≤ 5.0 (Wheaton et al., 1977)	1532.198/247 6.203	1075.684/230 4.677
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.781	0.853
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.734	0.808
NFI	≥ 0.80 (Wu & Wang, 2006)	0.815	0.870
CFI	≥ 0.80 (Bentler, 1990)	0.840	0.894
TLI	≥ 0.80 (Sharma et al., 2005)	0.821	0.873
RMSEA	≤ 0.10 (Hopwood & Donnellan, 2010)	0.102	0.086
Model Summary		Unacceptable Model Fit	Acceptable Model Fit

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index, and RMSEA = Root mean square error of approximation
Source: Created by the author.

According to Fornell and Larcker (1981), the convergent validity and discriminant validity are ensured by the square root of average variance extracted determining all the correlations are higher than the corresponding correlation values for that variable. Multicollinearity occurs when independent variables in a regression model are correlate From Table 5, there is no multicollinearity's issue in this study.

Table 5: Discriminant Validity

	AA	R	SQ	F	SS	SL
AA	0.764					
R	0.448	0.706				
SQ	0.550	0.614	0.819			
F	0.524	0.547	0.719	0.725		
SS	0.506	0.610	0.766	0.686	0.850	
SL	0.475	0.544	0.702	0.588	0.788	0.773

Note: The diagonally listed value is the AVE square roots of the variables
Source: Created by the author.

4.3 Structural Equation Model (SEM)

Structural equation modeling (SEM) is a method of analyzing relationships between variables based on their covariance matrix, combining structural path analysis with factor analysis (Hair et al., 2010). The goodness-of-fit index of the structural model was measured as shown in Table 6. For the initial model, GFI and AGFI were unacceptable fit. Accordingly, the model adjustment was required in the SPSS AMOS statistical software. The results after the adjustment were acceptable fit with CMIN/DF = 4.102, GFI = 0.852, AGFI = 0.817, NFI = 0.858, CFI = 0.888, TLI = 0.873 and RMSEA = 0.079.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable Values	Statistical Values Before Adjustment	Statistical Values After Adjustment
CMIN/DF	≤ 5.0 (Wheaton et al., 1977)	1344.194/294 4.572	1169.014/285 4.102
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.827	0.852
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.794	0.817
NFI	≥ 0.80 (Wu & Wang, 2006)	0.837	0.858
CFI	≥ 0.80 (Bentler, 1990)	0.867	0.888
TLI	≥ 0.80 (Sharma et al., 2005)	0.853	0.873
RMSEA	≤ 0.10 (Hopwood & Donnellan, 2010)	0.085	0.079
Model Summary		Unacceptable Model Fit	Acceptable Model Fit

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index, and RMSEA = Root mean square error of approximation
Source: Created by the author.

4.4 Research Hypothesis Testing Result

The model calculates the significance of each variable according to the regression weight and R2 variance of each variable. The results in Table 7 assume that four hypotheses are significantly supported, and one hypothesis is not significantly supported at $p\text{-value} < 0.05$. Student satisfaction was the most significant factor ($\beta = 0.988$), while service quality ($\beta = 0.685$), facility ($\beta = 0.425$), reputation ($\beta = 0.392$), and academic aspect ($\beta = 0.047$).

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: AA→SS	0.047	1.382	Not Supported
H2: R→SS	0.392	7.743*	Supported
H3: SQ→SS	0.685	15.725*	Supported
H4: F→SS	0.425	8.958*	Supported
H5: SS→SL	0.988	16.867*	Supported

Note: * $p < 0.05$

Source: Created by the author.

In Table 7, further interpretation can be extended:

The result of **H1** shows that academic aspect has no significant impact on student satisfaction, resulting the standardized coefficient value of 0.047 ($t\text{-value} = 1.382$). The result conflicts with previous studies that academic aspect in higher education as learning components of students can determine the level of satisfaction (De Santini et al., 2017; Herrera-Mosquera & Tovar-Perdomo, 2017; Pham et al., 2022).

In **H2**, the finding is supported by many scholars that reputation predicts the student satisfaction with standardized coefficient value of 0.392 ($t\text{-value} = 7.743$). Numerous studies acknowledged that a university's reputation can be demonstrated by good brand image which has a direct impact on student satisfaction (Ali et al., 2016; Shapiro, 1983; Wilson & Grimlund, 1990).

For **H3**, service quality has a significant impact on student satisfaction with standardized coefficient value of 0.685 ($t\text{-value} = 15.725$). The result implies the importance to improve service quality to enhance student satisfaction among higher education institutions (Kassim & Abdullah, 2010; Lee et al., 2011; Naik, et al., 2010; Parasuraman, et al., 1988).

H4 denotes the significant impact of facility on student satisfaction, representing standardized coefficient value of 0.425 ($t\text{-value} = 8.958$). The result signifies tangible goods and asset, including buildings, facilities and equipment have a strong impact on how students are satisfied with the overall campus life and school environment (Bin Baba, 2002; Le et al., 2021; Song, 2022; Wang et al., 2011).

H5 confirms that the relationship between student satisfaction and student loyalty are supported with

standardized coefficient value of 0.988 ($t\text{-value} = 16.867$). Therefore, the result aligns with numerous studies that student satisfaction is an important measure to evaluate the student loyalty in higher education (Alnaser & Almsafr, 2014; Chong & Ahmed, 2012; Song, 2022; Sultan & Wong, 2010).

5. Conclusions and Recommendation

5.1 Conclusion and Discussion

In conclusion and discussion, this research accomplishes to investigate the determinants of Chinese college students' satisfaction and loyalty, using a case study of Chuxiong Normal University. The online questionnaire was distributed to 500 students of Chuxiong Normal University. Through CFA and SEM, the factors affecting college students' satisfaction and loyalty were analyzed. The results revealed that reputation, service quality and facility significant affect student satisfaction. Furthermore, student satisfaction has a significant impact on student loyalty. On the other hand, academic aspect has no significant impact on student satisfaction.

The findings can be further implied in theories and practices. First, student satisfaction has the greatest impact on student loyalty. The research shows that student satisfaction has a direct and significant impact on student loyalty (Alnaser & Almsafr, 2014; Chong & Ahmed, 2012; Song, 2022; Sultan & Wong, 2010) which determine the positive and favorable feeling towards a university can enhance their long-term support such as referring to other prospective students, continue to study in a higher degree and support the alumni community. In addition, demographic information revealed that 91.8 percent of students prefer to recommend others to attend the university.

Second, service quality strongly supports student satisfaction. Kassim and Abdullah (2010) highlighted that service quality can be an indicator to evaluate student satisfaction. In practice, it is essential to consistently improve service quality by providing personnel training and equipment maintaining, and to evaluate satisfaction level of students to assess their needs for improvement. Third, student satisfaction is affected by facility. Song (2022) emphasizes that teaching and learning facilities are considered by new students as well as evaluated by existing students of their satisfaction. In the light of this, it is important to maintain good facilities as well as initiate innovation to provide more convenience and benefits for students.

Fourth, reputation significantly affects student satisfaction. Ali et al. (2016) pointed out that the reputation is hard to build and easy to break. Reputation represents the

good brand image to the whole society through the credibility, reliability and transparency of overall educational aspects such as the service quality, teachers and staff skills, enrollment process, student satisfaction and graduate employment rate. Therefore, a university should monitor the positive social voices as well as its position and ranking in the market to enhance the brand reputation.

Last, the academic aspect has no influence on the student satisfaction opposed by many scholars (De Santini et al., 2017; Herrera-Mosquera & Tovar-Perdomo, 2017; Pham et al., 2022). It can be assumed that academic aspect cannot be achieved by only the attempts to increase student satisfaction. Improvement in academic aspect is need to be assessed without evaluating student satisfaction. Furthermore, as this study was conducted during the pandemic, students probably determine academic aspect as the enhancement of the academic level, atmosphere and training which are not sufficient to drive their satisfaction. In conclusion, academic practitioners and university executives should improve student satisfaction and loyalty by promoting good reputation and evaluating the efficiency of academic program, service and facility.

5.2 Recommendation

Recommendations are developed based on the findings of this study. First, the study found that service quality, facility and reputation are the main factors affecting the satisfaction and loyalty of students in Chuxiong Normal University in China. Therefore, it is recommended that the university should focus on these areas to enhance student satisfaction and loyalty. Among them, facilities are tangible assets which involve some sources of investment and funds which need to be strategized and planned. Second, service quality relates to overall students' journey and campus life from the admission and enrollment to the graduation. The university has to design academic service to ensure convenience and satisfaction of students such as digitizing admission and enrollment process, mobile application for grading system, e-learning etc.

Third, reputation is the integration of academic components which are teachers, administrative personnel, service personnel, programs, campus facilities and university ranking. Therefore, a university needs to strictly structure the relevant people and system to help students in achieving their academic and career goals. Reputation is the long-term building process which a university can also consistently promotes their programs, students' achievement as well as job placement to the community. Fourth, satisfaction promotes loyalty which a university could create the system to monitor student satisfaction consistently. Some universities regularly put the satisfaction survey for students to evaluate each course and their

lecturers via mobile application. This way can help a university to identify the problem as well as to improve satisfaction level of students. SERVQUAL index can be applied in the academic service context to investigate the satisfaction. Student loyalty can be enhanced by creating activities and events for students. Also, alumni community should be endorsed to embed the strong bond of graduates as they potentially convince other prospective students from their family or social circle.

Last, this study fails to prove the relationship between academic aspect and student satisfaction. In assumptions, student satisfaction is not predicted by academic aspects due to the pandemic situation might lead the results to be insignificant. Thus, future academic researchers and education executors should conduct the qualitative survey to find out the clear interpretation of the insignificant effect of academic aspect and student satisfaction in different situation.

5.3 Limitation and Further Study

In terms of limitations, this study is based on the evaluation of students from Chuxiong Normal University in China. It is possible that different results of the analysis will be obtained in different regions, types of schools or countries. Furthermore, future research can be made to explore more or other factors affecting student satisfaction and loyalty, such as brand image, teaching quality, job placement and so on. Finally, to identify clearer interpretation of the findings, the qualitative study such as focus group and interview is recommended.

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