

pISSN: 1906 - 3296 © 2020 AU-GSB e-Journal.
eISSN: 2773 – 868x © 2021 AU-GSB e-Journal.
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Factors Affecting Undergraduate Students' Satisfaction and Loyalty with Independent Institutions in Sichuan, China

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Received: September 19, 2023. Revised: October 2, 2023. Accepted: October 7, 2023.

Abstract

Purpose: This study aims to investigate the factors that affect students' satisfaction and loyalty to independent institutions in Chengdu, Sichuan province. The researcher developed a conceptual model consisting of seven variables, and seven hypotheses that examined the impact of perceived value, service quality, university reputation, university image, and student trust on student satisfaction, university image, and student satisfaction on student loyalty. **Research design, data, and methodology:** A quantitative method and questionnaire were used to collect sample data from target populations. The study involved 575 undergraduate students in four selected independent institutions in Chengdu. The content validity and reliability were tested using Item-Objective Congruence and Cronbach's Alpha pilot test before distributing the questionnaire. The researcher employs judgmental, quota, and convenience sampling. Confirmatory Factor Analysis and Structural Equation Modeling were utilized to analyze the data. **Results:** The findings showed that perceived value, service quality, university reputation and university image significantly affect student satisfaction. Student satisfaction is the strongest predictor of student loyalty. Nevertheless, student satisfaction is not affected by student trust, and university image has no significant effect on student loyalty. **Conclusions:** This study has the potential to provide valuable insights that can improve the educational quality and competitiveness of independent institutions in Chengdu.

Keywords : Higher Education, Independent Institutions, Student Satisfaction, Perceived Value, Service Quality

JEL Classification Code: E44, F31, F37, G15

1. Introduction

Private higher education is the fastest-growing segment of postsecondary education globally (Buckner, 2017). The State Education Commission released the Provisional Regulations on establishing Private Universities and Colleges. Then, non-government HEIs proliferated. Private higher education institutions are also known as nongovernmental higher education institutions in China. By the end of 2021, there were 786 nongovernmental, non-government HEIs in China, with 4.73 million enrolments. It accounted for 24.98% of all university students in the country (Department of Education of the People's Republic

of China, 2022). Private higher education in China is becoming increasingly important due to the increasing scale and quantity.

Chinese higher education institutes (HEIs) can be divided into Vocational HEIs and Academic HEIs. Vocational HEIs mainly enroll vocational undergraduate students. There is no degree certificate but a graduation certificate when they have studied for three years in Vocational HEIs. They can go directly to work or pass an exam and then study in Academic HEIs (the second type) to earn a bachelor's degree.

In Chengdu, Sichuan province, independent institutions of higher education are experiencing increased competition for student enrollment and retention. As these institutions

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seek to thrive in a highly competitive educational landscape, it is imperative to understand the factors that influence students' satisfaction and loyalty towards them. Student satisfaction and loyalty are vital for the long-term sustainability and success of these independent institutions. Therefore, this study aims to investigate the factors that impact students' satisfaction and loyalty to independent institutions in Chengdu, Sichuan province.

This study has the potential to provide valuable insights that can improve the educational quality and competitiveness of independent institutions in Chengdu, ultimately benefiting both students and the institutions themselves. Understanding the factors that drive student satisfaction and loyalty is critical in adapting to the changing landscape of higher education in the region.

2. Literature Review

2.1 Perceived Value

The perception of a product or service determines its perceived value (Zeithaml et al., 1988). In the study of Snij et al. (2004), the derivation of value indicates the appropriateness of perceived value in purchasing a product or service. Compared to the sacrifices made to obtain the product or service, the composite utility results are realized. In universities, the same statement can be made. The compromise method was recommended for studying students' perceived value. Evaluating education services' utility is compared to realizing goals through alternative approaches (Zeithaml et al., 1988). The student's overall assessment of the net worth of the service was determined by their assessment of what they received and what they received, which was perceived value (Kunanusorn & Puttawong, 2015).

H1: Perceived value has a significant effect on student satisfaction

2.2 Service Quality

Zeithaml et al. (1988) characterized service quality as superior or excellence in service delivery. According to Ali et al. (2012), service quality is a significant factor in competitiveness and is frequently discussed, especially in services marketing literature. Service quality resulted from comparison expectations and performance perception, which was a form of attitude related to satisfaction but not equal to satisfaction (Parasuraman et al., 1994). Chen and Esangbedo (2018), who analyzed colleges in Taiwan, recommended that researchers measure colleges' service quality by considering school, staff, and teacher dimensions. Annamdevula and Bellamkonda (2016) proposed an alternative to measure the

service quality of colleges by using higher education quality (HiEduQual).

H2: Service quality has a significant effect on student satisfaction.

2.3 University Reputation

Selnes (1993) explains that reputation is the overall assessment that occurs over a longer period and changes depending on the flow of information among customers. Herbig and Milewicz (1993) characterize as reputable the sum of all interactions between the entity and the parties over time. The university's reputation is determined by people's perceptions of its objectives, ethics, working methods, and treatment of students (Chen & Esangbedo, 2018). And the university's reputation is a reflection of its history and credible actions taken with its target groups (Nguyen & LeBlanc, 2001)

H3: University reputation has a significant effect on student satisfaction.

2.4 University Image

A person's impression of an object is known as an image. According to Haedrich (1993), the image is the psychological personality profile of an organization created by a person. The image and reputation have often been used interchangeably, as Arpan et al. (2003) stated. Gatewood et al. (1993) stated that the image was only linked to the organization's name. To survive and compete in the market, HEIs must immediately develop effective plans. Landrum et al. (2008) assert that university image is a valuable factor that aids a university in navigating tight market competition.

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H4: University image has a significant effect on student satisfaction.

H6: University image has a significant effect on student loyalty

2.5 Student Trust

Trust was defined as having faith in an exchange partner (Moorman et al., 1993). The definition of *student trust* is the student's trust in the university's integrity and reliability

(Rojas-Méndez et al., 2009). Students' trust in the institution is based on their personal experiences with faculty members, which reflects its integrity and reliability (Aritonang & Lerbin, 2014). Others described student trust as confidence in the university in taking appropriate measures that benefit them (Carvalho & de Oliveira Mota, 2010; Ghosh et al., 2001). Trust was defined as having faith in an exchange partner (Moorman et al., 1993). The definition of *student trust* is the student's trust in the university's integrity and reliability (Rojas-Méndez et al., 2009). Students' trust in the institution is based on their personal experiences with faculty members, which reflects its integrity and reliability (Aritonang & Lerbin, 2014). Others described student trust as confidence in the university in taking appropriate measures that benefit them (Carvalho & de Oliveira Mota, 2010; Ghosh et al., 2001).

H5: Student trust has a significant effect on student satisfaction.

2.6 Student Satisfaction

Satisfaction can be considered an overall evaluation of the services being offered based on the knowledge acquired while providing the service (Anderson et al., 1994). Elliott and Shin (2002) define student satisfaction as the positive impact of assessing various educational outcomes and experiences subjectively. Student satisfaction has become an important topic in higher education due to the increasing competition in this sector. Satisfaction in higher education is based on the perception that a student's performance meets or exceeds their expectations (Elliott & Healy, 2001).

H7: Student satisfaction has a significant effect on student loyalty.

2.7 Student Loyalty

The loyalty of the students was defined by the willingness of the students to share positive words about the institution and to recommend it to family, friends, employers, and organizations. Whenever there was an opportunity (Anderson et al., 1994), the trend and intent to re-use a university may be characterized by student loyalty (Brown & Mazzarol, 2008). A student's loyalty lies in choosing the same provider, such as HEIs or services for a specific need (Ali et al., 2012). The loyalty of students after passing through an academic institution is referred to as student loyalty by Helgesen and Nasset (2007), Mohamad and Awang (2009), and Thomas (2011).

3. Research Methods and Materials

3.1 Research Framework

The research about "Factors affecting vocational, undergraduate students' satisfaction and loyalty with Independent Institutions" is quantitative research through online questionnaires for data collection and analysis with a statistics program. Referring to theories, literature reviews, and various related research; Implementation of the student satisfaction index model in higher education institutions (Temizer & Turkyilmaz, 2012); The influence of service quality, university image on student satisfaction and student loyalty (Chandra et al., 2019); Does higher education service quality affect student satisfaction, image, and loyalty? (Ali et al., 2012) and the relationships between brand association, trust, commitment, and satisfaction of higher education institutions (Chen, 2017). The research framework and methodology developed as follows:

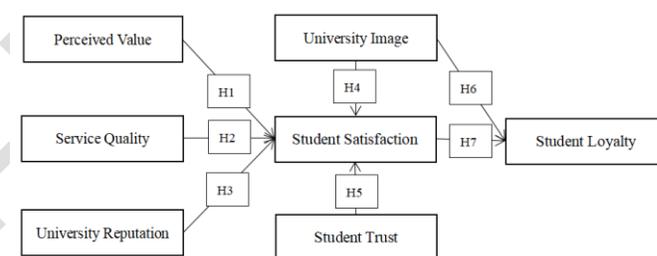


Figure 1: Conceptual Framework

H1: Perceived value has a significant effect on student satisfaction

H2: Service quality has a significant effect on student satisfaction.

H3: University reputation has a significant effect on student satisfaction.

H4: University image has a significant effect on student satisfaction.

H5: Student trust has a significant effect on student satisfaction.

H6: University image has a significant effect on student loyalty.

H7: Student satisfaction has a significant effect on student loyalty.

3.2 Research Methodology

In this research, the instrument proposed for data collection was conducted through a questionnaire survey via an online platform called "Questionnaire Star." The questionnaire was distributed to the target population using

non-probability convenience sampling mixed with judgmental Sampling. It comprised three sections containing 33 questions, which are 3 screening multiple choice questions aimed to identify the targeted respondent, two demographic multiple-choice questions aimed to collect demographic characteristic data of students in China, and 33 five-point Likert Scale questions aimed to collect factors data which impact students' satisfaction and loyalty with Independent Institutions. The Likert Scale is composed of 5 scales ranging from 1 for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree, and 5 for strongly agree.

To ensure the questionnaire's reliability, a preliminary test was administered to a sample of 50 participants, followed by an assessment using the Index of Item-Objective Congruence (IOC). Three experts evaluated the IOC, and the results indicated that each scale item received a rating of 0.6 or higher, signifying a favorable level of congruence. Additionally, the pilot test incorporated the Cronbach alpha coefficient to analyze reliability, demonstrating strong internal consistency among all items, with values equal to or exceeding 0.7, as validated in Sarmiento and Costa (2016).

3.3 Population and Sample Size

The research aimed to study the target population, undergraduates studying in independent institutions in Chengdu, China. It is difficult to accurately count the number of users who often use social media in China. In regression analysis, many researchers say there should be at least ten observations per variable (Hair et al., 2014). Therefore, The minimum sample size = 7 (number of variables in the Proposed Conceptual Framework) x 10 = 70 respondents. In order to ensure that the data is sufficient for analysis, the researcher aims to collect 500 as the base sample size for the current research.

3.4 Sampling Technique

The researcher employs judgmental, quota, and convenience sampling. For judgmental, this study selects undergraduates studying in independent institutions in Chengdu, China. The quota sampling is demonstrated in Table 1. For convenience sampling, the data were collected via online questionnaires, aiming 500 respondents, and received 575 respondents after deducting incomplete and respondents who did not meet the screening requirements. The raw data was analyzed by using the JAMOVI Statistic program, and the results were as follows;

Table 1: Sample Units and Sample Size

University	Population Size	Proportional Sample Size
Jincheng College of Sichuan University	21,631	144
Chengdu college of University of Electronic Science and Technology of China	12,216	81
Southwest Jiaotong University Hope College	20,839	139
College of Arts and Sciences of Sichuan Normal University	20,376	136
Total	75,062	500

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

In Table 2, The researcher also analyzed the demographic information of 575 undergraduates studying in the four selected independent institutions in Chengdu using descriptive statistics and presented the results in Table 5.2. Based on the information in Table 2, the researcher found that of the 575 undergraduates. All the participants were undergraduates studying in the four selected independent institutions in Chengdu. 161 (28%) came from Jincheng College of Sichuan University, 128 (22.26%) came from Chengdu college of the University of Electronic Science and Technology of China, 143 (24.87%) of which were came from Southwest Jiaotong University Hope College, and 143 (24.87%) were came from College of Arts and Sciences of Sichuan Normal University. Regarding gender, 232 (40.35%) were male, and 343 (59.65%) were female.

Table 2: Demographic Profile

Demographic and General Data (N=575)		Frequency	Percentage
Gender	Male	232	40.35%
	Female	343	59.65%
Institutions	Jincheng College of Sichuan University	161	28%
	Chengdu college of University of Electronic Science and Technology of China	128	22.26%
	Southwest Jiaotong University Hope College	143	24.87%
	College of Arts and Sciences of Sichuan Normal University	143	24.87%

Source: Constructed by author

4.2 Confirmatory Factor Analysis (CFA)

In Table 3, a confirmatory factor analysis was used to evaluate the measurement template's adequacy. The measurement model must be adjusted for vocational undergraduates because the initial results are inaccurate.

Convergence validity pertains to the examination of relationships among variables within a shared construct. To evaluate convergence validity, Fornell and Larcker (1981) introduced three essential measurement criteria: factor loadings greater than 0.5, composite reliability (CR) exceeding 0.7, and average variance extraction (AVE) surpassing 0.4.

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
Perceived Value (PV)	Zeithaml et al. (1988)	5	0.939	0.798-0.917	0.938	0.751
Student Trust (ST)	Moorman et al. (1993)	5	0.935	0.830-0.895	0.930	0.728
Service Quality (SQ)	Zeithaml et al. (1988)	4	0.921	0.843-0.898	0.918	0.738
University Reputation (UR)	Selnes (1993)	4	0.942	0.861-0.938	0.944	0.809
University Image (UI)	Haedrich (1993)	4	0.922	0.729-0.947	0.934	0.782
Student Satisfaction (SS)	Anderson et al. (1994)	7	0.967	0.775-0.937	0.969	0.813
Student Loyalty (SL)	Anusorn (2015)	4	0.950	0.901-0.914	0.950	0.826

The structure model of the undergraduate student population. The statistical values of indices were CMIN/DF = 3.848, GFI = 0.843, AGFI = 0.802, NFI=0.934, CFI = 0.951, TLI = 0.943, and RMSEA = 0.067. From the values, indices of CMIN/DF, GFI, AGFI, NFI, CFI, TLI, and RMSEA were not acceptable. As a result, the structural model has been modified and re-calculated to ensure a good fit.

	PV	ST	SQ	UI	UR	SS	SL
SQ	0.770	0.754	0.859				
UI	0.736	0.774	0.788	0.884			
UR	0.719	0.776	0.786	0.78	0.899		
SS	0.779	0.753	0.776	0.776	0.731	0.902	
SL	0.693	0.694	0.665	0.683	0.724	0.726	0.909

Note: The diagonally listed value is the AVE square roots of the variables

Source: Created by the author.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/df	< 5.00 (Al-Mamary & Shamsuddin, 2015; Awang, 2012)	3.848
RMSEA	≤ 0.10 (Hopwood & Donnellan, 2010)	0.070
GFI	≥ 0.80 (Doll et al., 1994)	0.833
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.800
NFI	≥ 0.80 (Wu & Wang, 2006)	0.929
CFI	≥ 0.80 (Bentler, 1990)	0.947
TLI	≥ 0.80 (Sharma et al., 2005)	0.940
Model Summary		In harmony with empirical data

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 = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index and RMSEA = root mean square error of approximation

Additionally, in the CFA analysis, various fit indices, including GFI, AGFI, NFI, CFI, TLI, and RMSEA, were used to evaluate the model's goodness of fit. The study's convergent and discriminant validity were greater than the acceptable values, as shown in Table 5. This result ensured the validity of both convergent and discriminant validity.

Table 5: Discriminant Validity

	PV	ST	SQ	UI	UR	SS	SL
PV	0.867						
ST	0.725	0.853					

4.3 Structural Equation Model (SEM)

SEM technology has advanced dramatically and is now commonly used (Fan et al., 2016). This is a diverse array of methodologies used by scientists conducting experimental and observational research. SEM is widely used in the social and behavioral sciences but can also be used in epidemiology, business, and other fields (Hu & Bentler, 1999).

The adjustment quality indices have been recalculated in Table 6 as a function of the modified structural model. The results of statistical values were CMIN/DF = 4.979, GFI = 0.843, AGFI = 0.810, NFI=0.910, CFI = 0.926, TLI = 0.916, and RMSEA = 0.083. Confirmation of the structural model's fitness has been obtained.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Statistical Values
CMIN/df	< 5.00 (Al-Mamary & Shamsuddin, 2015; Awang, 2012)	4.979
RMSEA	≤ 0.10 (Hopwood & Donnellan, 2010)	0.083
GFI	≥ 0.80 (Doll et al., 1994)	0.843
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.810
NFI	≥ 0.80 (Wu & Wang, 2006)	0.910

Index	Acceptable	Statistical Values
CFI	≥ 0.80 (Bentler, 1990)	0.926
TLI	≥ 0.80 (Sharma et al., 2005)	0.916
Model Summary		In harmony with Empirical data

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 = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index and RMSEA = root mean square error of approximation

4.4 Research Hypothesis Testing Result

Regression or normalized path coefficients can be used to calculate the correlation between the independent and dependent variables stated in the hypothesis.

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-Value	Result
H1: PV →SS	0.358	4.864***	Supported
H2: SQ→SS	0.261	3.624***	Supported
H3: UR→SS	0.235	6.049***	Supported
H4: UI→SS	0.330	4.662***	Supported
H5: ST→SS	0.038	0.533	Not Supported
H6: UI→SL	-0.024	-1.006	Not Supported
H7: SS→SL	0.739	19.31***	Supported

Note: *** p<0.001

Source: Created by the author

H1 suggested that perceived value has a positive relationship with student satisfaction. The results substantiate this hypothesis with a β value of 0.358 and a value of 4.864. This is consistent with the study by Serenko et al. (2011), according to which perceived value has a positive and meaningful impact on satisfaction.

H2 suggests that higher perceptions of service quality positively impact satisfaction. The results substantiate this hypothesis with a β value of 0.261 and a t value of 3.624. The findings indicate that the quality of academic services in the Chinese higher education sector largely influences student satisfaction. This result is consistent with previous research (Brady & Cronin., 2001; Kuo & Ye., 2009).

H3 predicted that student satisfaction would be significantly affected by reputation, which was confirmed by the results, with a value of 0.235 and 6.049. This confirmed that students with a positive reputation with the university will have a higher level of satisfaction. This result is consistent with previous research (Brown & Mazzarol, 2008; Fazio & Mark, 1978).

H4 postulated that the image of the university had a positive effect on students' satisfaction with the institution of higher education. The results supported the hypothesis with a value of 0.334 and a t-value of 6.702. This result is consistent with previous research findings (Alves & Raposo,

2010; Clemes et al., 2013). The psychological goodwill that students have towards their university has a significant impact on their emotional response and evaluation of their cumulative experience.

According to **H5**, student trust has no significant effect on student satisfaction with the higher education institution. The result showed the standardized coefficients to be 0.038 and the t-value to be 0.533. The result falls under the research category that does not support a significant correlation between student trust and satisfaction (Shiau & Chau, 2012; Thong et al., 2006).

H6, which assumed the significant effect the image had on student loyalty. The result showed the standardized coefficients to be -0.024 and the t-value to be -1.006. The study complements research that does not support a significant link between trust and student satisfaction (MacMillan et al., 2005; Selnes, 1993).

The hypothesis of **H7** was that student satisfaction significantly affects student loyalty. Results with a value of 0.739 and a t-value of 19.31 confirmed it. It is clear from these results that satisfied students are more likely to maintain loyalty. This conclusion aligns with previous research (Arif & Ilyas, 2013; Beerli Palacio et al., 2002; Helgesen & Nasset, 2011).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

The purpose of this study is to examine the factors that contribute to the satisfaction and loyalty of university students to Chengdu's independent institutions. Undergraduates and vocational undergraduates studying at the four selected Independent Institutions in Chengdu, China, were the target population.

The researcher developed the conceptual framework for this study by collecting, compiling, and applying existing ideas, literature, and models. This research combines two independent theories: The European Customer Satisfaction Index model proposed by Eklöf and Westlund (2002) and the UATUA model (Venkatesh et al., 2003).

The problem statement and research objectives were established once the conceptual framework was developed. The study employed a quantitative approach to gathering data from undergraduates and vocational undergraduates studying in the four selected Independent Institutions in Chengdu, China. The collected data were analyzed using Cronbach's coefficient and confirmatory factor analysis (CFA) to ensure reliability and validity. In addition, the study used structural equation modeling (SEM) to analyze causal relationships among variables. At this point, the study has identified the factors that impact the satisfaction and loyalty

of independent institutions.

The impact of perceived value on student satisfaction is significant and positive in this study. Students will be satisfied when comparing the effort and reward, or the value they receive with their investment, such as money or time, is what matters. The findings are consistent with previous research (Hellier et al., 2003; Tam, 2004; Wallin et al., 1998; Wen et al., 2005). The study confirms that as the students perceived value increases, the student's satisfaction will also increase. The students believe a trade-off is appropriate between what they give and receive in return. Their emotional reaction towards the university tends to be more positive.

5.2 Recommendation

The researcher analyzed the correlation between perceived value, service quality, university reputation, university image, and student trust, which affects student satisfaction and loyalty to independent institutions in Chengdu, Sichuan province.

Independent institutions used the names of prestigious universities and even shared faculty resources. They can award degrees or diplomas recognized by the government. Students who enter an independent college often have access to the educational resources of their university, especially faculty resources.

However, independent institutions use the names and faculty resources from prestigious universities that do not come for free. There is a huge annual cost for this. Independent colleges are for-profit, the most fundamental difference from public colleges. The pursuit of profit has always been the purpose of independent college operations. Therefore, increasing school profits is also the pursuit of independent colleges. Typically, two paths to high profitability are increasing revenue and controlling costs. Private higher education institutions in China rely on tuition fees as their primary source of financial assistance. Registering is necessary for any private higher education institution to survive and succeed. Independent institutions' current situation, where fixed tuition fees are only increased by increasing the number of students, is caused by increased income. Controlling costs, which include equipment investment, is necessary at the same time. This will inevitably influence the evaluation of service quality by students.

In independent institutions, student trust and satisfaction are not directly linked, which is a key finding in this paper. This finding can largely be attributed to teacher resources. Many independent institutions need more funding and resources. The ability of these independent institutions to

attract qualified teachers has also raised concerns about low quality. Most independent institution teachers have low salaries and income levels, and retaining excellent talents takes time. Part-time teachers are heavily relied on, while full-time teachers are centered around young teachers with little teaching experience and senior teachers retiring from the public sector.

5.3 Limitation and Further Study

Despite the scientific methods used in this study, it is necessary to consider the study's limitations in interpreting the results. The study was based primarily on data collected from students attending independent institutions in Chengdu. Due to their short development time, the selected independent institutions need to catch up to other universities in terms of infrastructure. It will probably affect how students perceive and behave in the school, reducing the size of the relationships proposed in the structural model.

Data collected at a specific time was the basis of the study. As students make progress through their studies, their perceptions of school may change. Future studies should utilize longitudinal data to capture changes in students' perceptions. The most efficient way to do this is to follow these students lengthwise through university life.

Thirdly, in terms of overall quality, students can rely more on concrete things to conclude overall quality. Future research could explore students' perspectives on what education provides—considering their perspective on intangibles like core subject content and career information related to the courses taught.

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