



EXPLORING THE LINK: HOW SERVICE QUALITY INFLUENCES STUDENT SATISFACTION AND FOSTERS LOYALTY IN EDUCATIONAL INSTITUTIONS

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Received 7 February 2024

Revised 24 April 2024

Accepted 1 May 2024

Abstract

Student loyalty has improved the sustainable development and survival rate of private universities. The quality of universities' services is an important indicator for measuring the results of private universities. This research aims to explore the mediating role of satisfaction between service quality and student loyalty. The researcher used a random sampling method to collect data from 493 responses of students in private universities in Guangxi. Using SmartPLS 4 software, the relationship between structures was analyzed using partial least squares (PLS) structural equation method.

The results indicated that service quality affected student satisfaction, which in turn influenced loyalty. However, service quality had no significant direct impact on loyalty. The impact of service quality on loyalty was indirect, as mediated by satisfaction. Therefore, while improving the quality of university services, university managers should pay more attention to the improvement of student satisfaction, and continuously promote the close connection and recognition of students with colleges and universities, to stimulate and consolidate the loyalty of students.

Keywords: Private Universities, Service Quality, Student Satisfaction, Student Loyalty

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Introduction

With the expansion of enrollment in Chinese universities, competition among private higher education institutions has intensified, highlighting the importance of student satisfaction and loyalty for the sustainable development of universities. This research investigates the impact of service quality and management on student loyalty in Guangxi's private universities, which heavily rely on student enrollment for income and face intense competition (Sari et al., 2022). It aims to improve the overall quality of higher education services to enhance student satisfaction and loyalty.

Previous studies have focused more on the direct impact of service quality on student satisfaction in higher education, such as the study of the determining factors of student satisfaction in informal education institutions (Kediri-Indonesia, 2023), as well as the study of student satisfaction and behavioral willingness (Kanduri & Radha, 2023), often neglecting the comprehensive perspective on how service quality, including management and educational services, affects student loyalty through student satisfaction. In other words, there is relatively little research on the mediating role of student satisfaction between service quality and student loyalty.

The significance of this study lies in its potential to guide improvements in teaching quality and innovation in talent cultivation by assessing service quality from the student perspective, which is crucial for enhancing educational outcomes and university service standards (Setiawan et al., 2021).

Research Gap

Despite the acknowledged importance of service quality, student satisfaction, and loyalty within the context of higher education, there exists a notable void in the empirical investigation of these dynamics specifically within private universities in Guangxi. This gap underscores a critical need for a focused examination of how service quality impacts student satisfaction and, subsequently, loyalty in this unique geographical and institutional context.

Conceptual Framework

Based on social exchange theory and previous literature, as well as literature analysis on the definition of service quality and student loyalty and the relationship between the two variables, this study constructs a conceptual model for the study of service quality and loyalty in universities, as shown in Figure 1.



This study identified service quality as the independent variable and student loyalty as the dependent variable. Student satisfaction is the mediating variable. The conceptual framework of this study assumes the relationship between service quality, student satisfaction, and student loyalty in universities and proposes research hypotheses as follows:

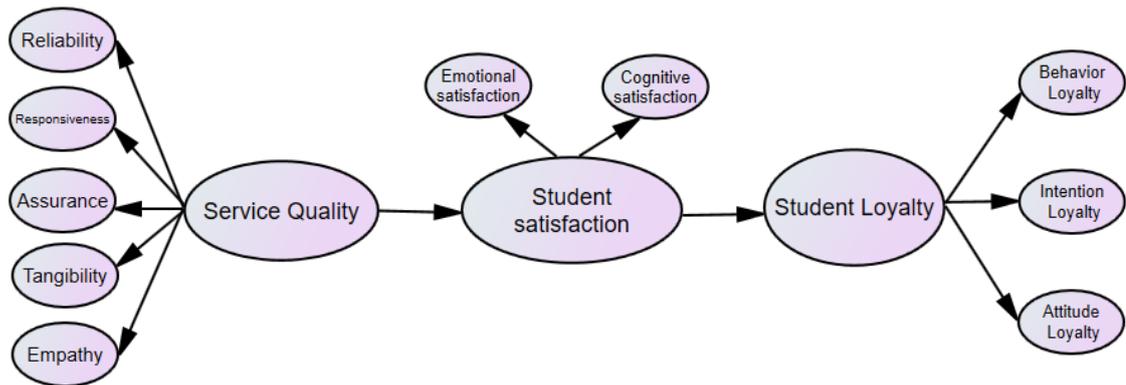


Figure 1 Conceptual Framework

Literature Review

Service Quality

The concept of service quality proposed by Parasuraman et al. (1988) has inspired other researchers to investigate this concept in various fields of service (Parasuraman et al., 1988). Service quality can be defined as a series of parameters, such as Tangibles, Customization, Access, Communication, Understanding/knowing the customer, Security, Courtesy, Competence, Credibility, Reliability, Responsiveness, and Cost (Stefano et al., 2020). Miah (2021) found in his study of service quality in the banking industry that these banks' customers are very sensitive to their services in Bangladesh. Service quality has become an important component of customer satisfaction. Day in and day out, this has proven that customer satisfaction and loyalty are related to service quality (Miah, 2021).

Higher education is a social practice activity with a service nature, and educational services are a service process in which the education provider provides knowledge skills, and labor services to the educated, promoting their physical and mental development. In this study, service quality refers to student's judgment of the overall advantage or superiority of educational services during their school years.



Some scholars measure service quality from the perspectives of technical quality, compensation quality, and process quality (Ma, 2018). Some scholars measure the service quality of universities from the perspectives of teaching resources, learning support services, curriculum and teaching quality, and student development (Jin & Sun, 2020). Some scholars measure service quality from the perspectives of teaching quality, management quality, life quality, and employment quality (Liu, 2019). Some scholars measure service quality using three dimensions: information quality (IQ), service efficiency (SE), and teaching quality (TQ) (Rasheed & Rashid, 2023). By analyzing existing literature, the vast majority of scholars use the SERVQUAL model to measure service quality, which has been confirmed in their research (Chandra et al., 2019; Jiang, 2022; Tan et al., 2022; Yang, 2023; Zhai & Kong, 2020).

Student Satisfaction

Ge (2016) and Tithsatya and Guo (2017) both explore student satisfaction (Guo, 2017; Tithsatya, 2017), defining it as a comprehensive evaluation based on students' expectations, teaching value, employment experience, and subjective feelings towards their educational experiences. This concept of satisfaction leans heavily on students' personal feelings and satisfaction with their school. Research has shown that student satisfaction is linked to their behavioral intentions, confirming that satisfaction is a key component in evaluating higher education services, including perceptions of college image and institutional reputation (Jin & Sun, 2020; Saneva & Chortoseva, 2023). This satisfaction encompasses students' overall feelings about their education, teaching quality, management, and campus culture.

Different scholars have proposed various dimensions for measuring student satisfaction. For instance, Chi & Shao (2018) identifies two key dimensions of student satisfaction in doctoral education quality: emotional satisfaction and cognitive satisfaction. This study adopts a dual-dimension approach to assess student satisfaction, reflecting both the affective and cognitive aspects of their educational experiences.

Student Loyalty

Oliver et al. (1997) defines loyalty as customers having a strong preference for a specific product or service, and even if the opponent's marketing efforts induce other purchasing behaviors, they will continue to patronize the product or service (Oliver et al., 1997). The concept of student loyalty comes from customer loyalty. Customer



loyalty is manifested by consumers' tendency to purchase and repeat a certain product, and correspondingly, student loyalty is also manifested as student's willingness to recommend schools to others, continue to pursue their courses or degrees, and so on (Huang, 2017). Student loyalty is crucial for the development of a school, as it means that students have the intention to reciprocate their alma mater in various forms in different identities (current students or alumni) in the future, and the development of a school cannot do without the support of the alumni group and the alumni group.

Student loyalty is a positive emotional connection between students and their school of study, trust in the school, and a willingness to promote the school's responsibility. It can be the intention to return to the school and purchase school services again, or the initiative to recommend family and friends to study at the school, manifested in various beneficial behaviors that promote the development of the school. In this study, student loyalty refers to a deeply ingrained internal commitment to give back to the school in the future, specifically referring to the student's intention to give back to the school.

Analysis of the measurement dimensions of student loyalty in existing literature, Some scholars use three dimensions to measure, while others use two dimensions to measure. Ge (2016) divided customer loyalty into emotional, intentional, and behavioral loyalty (Ge, 2016). Shi (2020) divided student loyalty into two dimensions: recommendation and re-selection (Shi, 2020). In this study, By analyzing existing literature on the measurement dimensions of student loyalty, scholars have not yet formed a unified dimension for measuring student loyalty. Based on the actual situation of private universities in Guangxi, this study adopts two dimensions to measure student loyalty: attitude loyalty and behavior loyalty.

Attitude loyalty refers to the willingness to recommend to family, friends, and acquaintances around you for admission to this school; praising and spreading positive word-of-mouth about the school to others; full of confidence in the development of my alma mater. Behavioral loyalty refers to the willingness to pursue further education at the university if there is an opportunity in the future; give back to your alma mater through donations or other forms after graduation; proactively maintain the reputation of the school; join alumni associations and other organizations.



Hypothesis Formulation

The social exchange theory views customer satisfaction and loyalty to the organization as a relational response from the receiving party to the giving party during the exchange process. In their research, they found that service quality in universities has a positive impact on student satisfaction and loyalty (Nursaid et al., 2020). According to Pelealu 's (2021) research on the impact of service quality, service innovation, and brand image of Telecom Corporation in Indonesia, it was found that the service quality of telecom companies has a positive impact on customer loyalty. High and efficient service quality can improve customer satisfaction, and enhance customer loyalty (Pelealu, 2021).

The same conclusion has also been proven in the hotel service industry. In the study of the impact of online booking systems and online customer evaluations on brand image, trust, and hotel booking decisions, Faliha et al. (2021) found that hotel service quality also has a positive impact on customer loyalty (Faliha et al., 2021). The sustainable development practices of universities have a positive and direct impact on service quality, student satisfaction, university image, and student loyalty. Moreover, service quality has a positive and strong impact on student loyalty. In addition, service quality, student satisfaction, and university image play a mediating role in the relationship between sustainable development practices and student perception in universities (Doan, 2021).

In the field of higher education, some scholars' research results also confirm the relationship between the two (Cahyono et al., 2020; Chandraa et al., 2020). In the field of higher education, a large number of studies have pointed out that the quality of educational services is the foundation of student satisfaction. Various components of educational service quality (including teaching service quality, administrative service quality, life service quality, etc.) can greatly affect student satisfaction with schools. Moreover, satisfaction, as an important factor in evaluating the quality and intensity of customer service provider relationships, is also considered to have a close relationship with the quality of educational services. As a result, in this study, it is hypothesized that:

H1: Service quality affects student satisfaction.

H2: Student satisfaction affects student loyalty.

H3: Student satisfaction mediates the relationship between service quality and student loyalty.



Research Methodology

Population and samples

As of June 2023, according to the Education Statistics Bulletin released by the Guangxi Department of Education, there are approximately 338000 students enrolled in private universities in Guangxi. According to Yamane (1973), when the total number of the target population is known, the formula for calculating sample size is as follows (Yamane, 1973): $n = \frac{N}{1 + N \times e^2}$, (n: means sample size, N: means population, e: e = 0.05), After calculation, the minimum sample size data for this study is 399. Meanwhile, plus a 10% sampling error (or missing value), Therefore, the sample size required for this study is 439.

To ensure the accuracy and validity of the data, the author conducted a pre-test on the survey questionnaire. In terms of reliability, all variables Cronbach's in the article need to be tested α . The recommended values with CR values greater than 0.7 indicate good reliability of the survey data. In terms of validity, using AVE index analysis, it was found that the AVE values of each variable were greater than the recommended value of 0.5 after calculation. On this basis, the KMO test and Bartlett sphericity test were performed on the sample data, the KMO value is 0.833, greater than 0.7, meeting the prerequisite requirements of factor analysis, and the data passed the Bartlett sphericity test ($p < 0.05$), indicating that the research data is suitable for factor analysis and information extraction, indicating that the validity of this scale is good.

This research adopts the random sampling method. During the autumn semester of 2023, 500 students from private universities in Guangxi private universities were chosen at random from a list of the entire students. The interviewees completed their self-report questionnaires. A total of 500 questionnaires were issued. A total of 439 responses (87.8%) were received, the samples include 246 male students (59.22%), and 193 female students (27.8%). 60% of the respondents come from the undergraduate level, and the rest come from College level.

Measures

The questionnaire consists of 54 items. Respondents were informed of their consent. Participants were asked about their gender, grade, age, and type of university they attended.



Service quality (Yang, 2023), as assessed by Yang (2023), Hwang & Choi (2019), and Yang (2023), comprises 25 items being categorized into five dimensions: Tangibility (SQ1), Reliability (SQ2), Responsiveness (SQ3), Assurance (SQ4), and Empathy (SQ5). The reliability coefficients (Cronbach's alpha) ranged from .62 to .88.

Student satisfaction as developed by Wang (2015) and (Ge, 2016), consists of 10 items primarily focusing on Cognitive Satisfaction (SS1) and Emotional Satisfaction (SS2) (Wang, 2015). The reliability coefficients were .67 and .79.

Measurement of student loyalty (Rao, 2018; Ge, 2016), based on a set of 15 questions developed by Rao (2018) and Ge (2016), encompasses three dimensions: Behavior Loyalty (SL1), Intention Loyalty (SL2), and Attention Loyalty (SL3). The reliability coefficients ranged from .77 to .81.

Results

To test the complex structural model of this study, this research uses the Partial Least Squares Structural Equation Modeling (PLS-SEM) (Hair et al., 2022). A structural equation model construction (SEM) technology is to estimate the parameters in the outer model and inner model.

Measurement Model

To use the PLS assessment of the reliability and validity of the variables, this study uses Indicator loading, Cronbach's Alpha coefficients, composite reliability (CR), and Average Variance Extracted (AVE). To ensure reliability, the loading value of each item should be greater than 0.7 and significant. AVE is an indicator used to evaluate the effectiveness of the convergence of the structure. It is the average variance for the extraction of all indicators on each structure. The value of the AVE should be greater than 0.50 (Fornell & Larcker, 1981). The results fully confirmed the convergent validity because all measures have an AVE higher than 0.50.

To assess the discriminant validity among constructs, Fornell and Larcker (1981) propose that the square root of the Average Variance Extracted (AVE) for each construct should be higher than its correlation with other latent variables. As depicted in Table 1, the values on the diagonal, representing the square root of AVE, are higher than the correlation coefficients between each variable.

**Table 1** Discriminant Validity among Constructs

	SL1	SL2	SL3	SQ1	SQ2	SQ3	SQ4	SQ5	SS1	SS2
SL1	0.846									
SL2	0.505	0.87								
SL3	0.559	0.526	0.856							
SQ1	0.123	0.112	0.179	0.862						
SQ2	0.093	0.09	0.117	0.603	0.845					
SQ3	0.116	0.144	0.142	0.643	0.573	0.832				
SQ4	0.118	0.128	0.106	0.63	0.645	0.636	0.82			
SQ5	0.096	0.087	0.131	0.648	0.643	0.665	0.737	0.829		
SS1	0.3	0.258	0.302	0.218	0.224	0.269	0.317	0.289	0.865	
SS2	0.327	0.299	0.348	0.257	0.285	0.283	0.333	0.345	0.61	0.861

Note. The value of the shadow is the correlation coefficient between variables, the values bolded on the diagonal represent the square root of the AVE of the latent variable.

SL1 = Behavioral loyalty, SL2 = Intention loyalty, SL3 = Attitude loyalty, SQ1 = Reliability, SQ2 = Responsiveness, SQ3 = Assurance, SQ4 = Tangibility, SQ5 = Empathy, SS1 = Cognitive satisfaction, SS2 = Emotional satisfaction, SL = Student Loyalty.

The second measure for evaluating discriminant validity is the Heterotrait-Monotrait (HTMT) ratio. HTMT assesses the mean correlation among constructs, with values below 0.85 indicating sufficient discriminant validity (Henseler et al., 2015). In Table 2, most variables exhibit HTMT values under 0.85, suggesting that the study's constructs demonstrate good discriminant validity.

Table 2 Discriminant Validity - HTMT

	SL1	SL2	SL3	SQ1	SQ2	SQ3	SQ4	SQ5	SS1	SS2
SL1										
SL2	0.554									
SL3	0.617	0.576								
SQ1	0.138	0.122	0.197							
SQ2	0.103	0.099	0.129	0.666						
SQ3	0.130	0.159	0.158	0.713	0.640					
SQ4	0.133	0.143	0.118	0.703	0.725	0.719				
SQ5	0.108	0.097	0.146	0.720	0.721	0.748	0.835			
SS1	0.329	0.281	0.330	0.239	0.247	0.299	0.354	0.321		
SS2	0.360	0.326	0.381	0.282	0.314	0.314	0.372	0.384	0.667	



Structural Model

When the PLS is used for the effectiveness of the structural model, the R^2 is used to explain the adaptability of the linear regression model (Barclay et al., 1995; Cohen, 1988; Ringle et al., 2005). The larger the value of the R^2 , the better the explanation of the model (Fornell & Larcker, 1981). The R^2 value greater than 0.670 indicates that the interpretation ability of the model is very substantial. The R^2 value around 0.333 indicates moderate interpretation ability. when the R^2 value is about 0.190, the explanation of the model is weak (Chin, 1998). Researchers evaluate complete models by calculating the R^2 values of first-order and second-order faces. From the results, most of the R^2 values of most faces are greater than 0.67, which indicates good prediction and interpretation ability.

Employing Partial Least Squares (PLS) to assess the structural model's effectiveness, the study analyzes the path coefficients between latent variables by examining their algebraic signs, magnitudes, and statistical significance (Huber et al., 2007).

Table 3 Hypothesis Testing Results

Path	Original sample (O)	SD	t	p
SQ -> SS	0.372	0.048	7.768	0.000
SS -> SL	0.412	0.046	9.037	0.000
SQ -> SS -> SL	0.153	0.027	5.646	0.000

The outcomes of the model are depicted in Table 3, with the bootstrapping method being used to determine the T-statistics' values and standard errors (Chin, 1998). The findings are revealed in Table 3. The positive impact of Service Quality on Student Satisfaction is significantly established ($\beta= 0.372$, $p<0.001$); The positive impact of Student Satisfaction on Student Loyalty is significantly established ($\beta= 0.412$, $p<0.001$); The indirect effect value of "Service Quality ->Student Satisfaction ->Student Loyalty" is ($\beta= 0.153$, $p<0.01$), the mediating effect of Student Satisfaction between Service Quality and Student Loyalty is significantly established.

Using PLS for the effectiveness analysis of the structural model, the F^2 is used to measure whether the independent variable has a significant impact on the dependent variable. F^2 indicates that the value of the low, medium, or large impact of predictable variables in the structure model is 0.020, 0.150, 0.350 (Chin, 1998; Cohen, 1988;



Ringle et al., 2005). The standard for structural model evaluation is very important. Pay special attention to the size of the interactive effect between the variables. In this study, the effect size (F^2) of service quality on student satisfaction was 0.161, and that of student satisfaction on student loyalty was 0.204.

When using the PLS for the effectiveness of the structural model, the statistics of Q^2 are the measurement of the correlation between the variables. The recommended threshold is $Q^2 > 0$. The higher the Q^2 value, the higher the model of the model (Fornell & Cha, 1994). The Q^2 value of all endogenous variables is greater than 0, and the maximum value reaches 0.595, indicating that the measurement of the prediction of the prediction between the variables of this model is good.

Discussion

This study confirms that service quality is a precursor to behavioral intentions, significantly impacting student satisfaction and loyalty, aligning with findings by Cheng & Michael (2020), Pelealu (2021), and Wonganawat et al. (2022). There is a strong positive correlation between service quality and satisfaction, and between satisfaction and loyalty, underscoring the direct and significant influence of service quality on both student satisfaction and loyalty. Furthermore, student satisfaction emerges as the primary driver of student loyalty, reinforcing out (Rasheed & Rashid, 2023) 3) and others (Rasheed & Rashid, 2023).

The research highlights the crucial mediating role of student satisfaction in the relationship between service quality and student loyalty, echoing the conclusions of studies by Dangaiso et al. (2022) and Phonthanukitithaworn et al. (2022). This mediation by student satisfaction is identified as the most potent factor in enhancing student loyalty. Thus, the study contributes to a deeper understanding of how service quality fosters student loyalty.

Given these insights, managers of private universities are advised to focus on delivering high-quality services and enriching students' university experiences. By fostering stronger connections and identification with the institution, universities can invigorate and sustain student loyalty.

Practical Implications

The research on the relationship between the quality of university uniforms and student satisfaction and loyalty can not only promote the development of universities



but also have profound implications for social harmony and stability, as well as the sustainable development of universities. With the advancement of teaching reform, the pursuit of excellence in education, increasing the competitiveness of universities, creating excellent teaching quality, and striving for parental recognition and student satisfaction have become the direction of efforts for major universities (Chen, 2018).

In addition to competing for student resources, universities are also increasingly competitive in terms of educational resources, student employment, and student satisfaction. Faced with complex situations and new situations, building a distinctive and satisfactory image for students is necessary for universities to achieve sustainable development (Ge, 2016).

Therefore, universities must improve the quality of education management services and identify student needs. By providing efficient and satisfactory services to students, universities can enhance their satisfaction and loyalty, This can then support these students to maintain positive behavioral intentions (Tan et al., 2022), Enhancing the positive reputation of students and enhancing the long-term sustainable development and competitiveness of universities.

Limitations and Directions for Future Studies

Due to the actual cost of questionnaires, the sample volume collected by the Institute accounts for a small proportion of the overall, which may lead to a certain sampling error and affect the accuracy of statistical analysis results. The sample came from a single source which is an undergraduate student, and a random sampling method was adopted, thus the generalization of the results should be done with care. It is recommended that future research should extend the scope of investigation to graduate students, or students in other areas.

At the same time, the researcher can also incorporate other influencing factors that affect student satisfaction and loyalty, such as perceived value.

Conclusion

Service quality directly enhances student satisfaction, which in turn boosts student loyalty. Both elements are crucial for student loyalty, reflecting the "mutual benefit" principle from social exchange theory. The better the educational and service experiences provided by institutions; the more likely students are to reciprocate in the future.



Student satisfaction acts as a bridge between service quality and loyalty, embodying social exchange theory's idea of reciprocal benefits. This highlights the need for private universities to innovate and continuously improve service quality and student satisfaction to foster loyalty and support sustainable development.

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