

UNVEILING THE DETERMINANTS INFLUENCING STUDENTS' SATISFACTION AND LOYALTY IN HIGHER EDUCATION INSTITUTIONS IN JIANGXI, CHINA

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Abstract

This study examined the factors influencing junior college students' satisfaction and loyalty in higher education institutions in Jiangxi Province, China. We surveyed 450 students from Jiangxi Polytechnic University using judgmental, quota, and convenience sampling. We analyzed the data using confirmatory factor analysis and structural equation modeling to test reliability, validity, and model fit. The findings confirmed that all proposed relationships were significant. Reputation emerged as the strongest predictor of satisfaction, followed by teaching quality, while academics, service delivery, and the campus environment also contributed. Satisfaction, in turn, positively affected loyalty ($\beta = 0.347$). The results indicated that strengthening institutional reputation, improving teaching practices, and enhancing services and facilities could substantially improve student experiences and foster long-term commitment. These insights provided practical guidance for policymakers and university leaders seeking to optimize resource allocation and support sustainable development in higher education.

Keywords: Student Satisfaction, Student Loyalty, Higher Education, Junior College Student

Introduction

The expansion of higher education reflects social, economic, and cultural progress (Teichler, 2007). In many developing countries, access has expanded rapidly to meet labor market needs, raising concerns about maintaining educational quality (Mamdani, 2018; Oyelaran-Oyeyinka & Adeya, 2017). Student satisfaction and loyalty, once peripheral, have become central indicators of institutional performance. As the number of universities grows, competition has intensified, encouraging institutions to improve quality and attract students (Gibbs, 2013; Streitwieser, 2016). Internationalization and technological change have added further challenges (Sultan & Wong, 2010).

China illustrates this transformation. The gross enrollment rate increased from 12.5% in 2000 to 51.6% in 2019, with over 30 million students enrolled (Ministry of Education of the People's Republic of China, 2020). This expansion improved access but also widened the gap between quantity and quality (Wang & Zhang, 2021). Jiangxi Province mirrors these national patterns. It hosts 109 universities, and public satisfaction with education ranked third nationwide in 2020. Despite this progress, universities continue to face challenges in teaching quality, academic development, service delivery, campus infrastructure, and institutional reputation, factors essential for educational advancement and competitiveness at Jiangxi Polytechnic University.

This study examines how these factors collectively influence student satisfaction and loyalty through an integrated framework based on Social Identity Theory, SERVQUAL, and SERVPERF. This integration enhances understanding of how perceived service quality and institutional identity shape students' experiences and attitudes. Focusing on Jiangxi Polytechnic University, the study provides localized evidence with broader implications. The findings can guide policymakers and administrators in designing strategies to strengthen teaching quality, service efficiency, and institutional reputation while informing national reforms and contributing to ongoing discussions on improving educational quality and competitiveness.

Literature Review

1. Teacher and Teaching (TT)

Teachers play a central role in shaping students' academic experience. Effective teaching requires subject expertise, strong pedagogical skills, and the ability to create a supportive classroom environment that encourages participation and critical thinking (Johnson & Johnson, 2009; Lortie, 1975). Teachers also act as role models and mentors, influencing students' personal and social development (Nilsson, 2010).

Research consistently shows that teacher quality strongly influences student satisfaction. Students value fairness, transparency, and proactive support in addressing their

concerns (Martirosyan, 2014; Rafik & Priyono, 2018). Moreover, teachers who demonstrate knowledge, care, and attentiveness foster trust and loyalty among students (Aleu et al., 2021; Chaudhary & Dey, 2020).

Prior studies highlight that knowledgeable and supportive teachers enhance both satisfaction and loyalty. Building on this evidence, the following hypothesis is proposed:

H1: Teacher and teaching (TT) have a significant impact on student satisfaction (SS).

2. Academic (AC)

Academic quality is a key driver of student satisfaction in higher education. A strong academic experience includes a well-designed curriculum, relevant course content, and opportunities to gain career-related knowledge and skills (Johnson & Johnson, 2009). Faculty members who teach clearly, encourage critical thinking, and provide timely feedback further enhance satisfaction (Smith, 2019).

Adequate academic resources such as libraries, research facilities, and updated learning materials also strengthen the learning experience (Bush et al., 1998). In addition, a supportive academic environment that fosters collaboration and a sense of belonging increases students' engagement and satisfaction (Canter & Canter, 1976). The level of academic challenge also matters: balanced difficulty motivates growth, while too little or too much challenge can reduce satisfaction (Wang & Zhang, 2021).

Curriculum quality, teaching effectiveness, resources, and the academic environment all play crucial roles in shaping student satisfaction. Based on this, the following hypothesis is proposed:

H2: Academic (AC) has a significant impact on student satisfaction (SS).

3. Service Delivery (SD)

Service delivery in higher education refers to providing academic and non-academic services that shape the student experience. High-quality service requires reliability, responsiveness, and empathy, which are key to meeting students' expectations (Parasuraman et al., 1988; Zeithaml et al., 1990).

Faculty services, such as clear communication, prompt feedback, and accessibility, enhance student satisfaction (Hennig-Thurau et al., 2001). Administrative efficiency, including smooth registration and supportive staff, also plays a vital role (Douglas et al., 2006). In addition, a clean, safe, and well-equipped campus environment strengthens the learning experience (Harvey & Green, 1993; Johnson & Patterson, 1993). Support services such as academic advising, career counseling, and extracurricular activities further contribute to satisfaction by providing personalized support and fostering student development (Clewes, 2003; O'Neill & Palmer, 2004).

The quality of academic, administrative, physical, and support services strongly influences how students evaluate their institution. Based on this evidence, the following hypothesis is proposed:

H3: Service delivery (SD) has a significant impact on student satisfaction (SS).

4. Built Environment (BE)

The built environment in higher education refers to the physical spaces that support teaching, learning, and student life. Well-designed classrooms, libraries, and learning facilities enhance student engagement and satisfaction (Pounder, 2007). Modern, functional facilities also improve teaching effectiveness and create better learning experiences (Hill et al., 2008).

Campus layout and design contribute to a sense of community and belonging, while the attractiveness and safety of the surrounding area influence how students perceive their institution (Harvey, 1995; Zeithaml et al., 1990). Recreational and social spaces further enrich student life by supporting well-being and peer interaction (Sander & Sanders, 2000). In addition, facility upkeep is essential, as clean, well-maintained spaces create a positive impression and improve satisfaction (Rowley, 1997).

Facility quality, campus design, location, and maintenance all shape students' educational experience and satisfaction. Based on this evidence, the following hypothesis is proposed:

H4: Built environment (BE) has a significant impact on student satisfaction (SS).

5. Reputation of the University (RU)

University reputation reflects how stakeholders perceive an institution's academic quality, research output, faculty expertise, and overall standing (Sporn, 1999; Taylor & Braddock, 2007). A strong reputation enhances visibility, attracts students, and strengthens institutional credibility (Hazelkorn, 2011).

Research shows that reputation plays a key role in shaping student satisfaction. Students are more satisfied when they study at institutions recognized for academic excellence, respected faculty, and research achievements (Helgesen & Nasset, 2007; Marzo Navarro et al., 2005). A strong reputation also creates opportunities such as internships, research projects, and networking, enriching the student experience (Voss et al., 2007). Reputation further influences how students perceive the value of their education. Attending a prestigious university fosters pride, attracts high-achieving peers, and strengthens career prospects, all of which contribute to satisfaction (Appleton-Knapp & Krentler, 2006; DeShields et al., 2005).

University reputation affects satisfaction through academic quality, faculty standing, student opportunities, and career value. Based on this, the following hypothesis is proposed:

H5: Reputation of the university (RU) has a significant impact on student satisfaction (SS).

6. Student Satisfaction (SS)

Student satisfaction reflects how well an institution meets or exceeds students' expectations in areas such as teaching quality, course content, facilities, and support services (Elliott & Shin, 2002; Oliver, 1980; Parasuraman et al., 1985). It is shaped by both emotional and cognitive evaluations of the educational experience and plays a critical role in retention, performance, and institutional reputation (Helgesen & Nasset, 2007; Hennig-Thurau et al., 2002).

Research shows that satisfaction strongly predicts student loyalty. Satisfied students are more likely to continue their studies, recommend the institution, and engage in campus activities (Oliver, 1999; Zeithaml et al., 1996). Quality teaching and personalized learning environments enhance both satisfaction and loyalty (Jones & Sasser, 1995; Kotler & Keller, 2012). In addition, peer relationships, a sense of belonging, and responsiveness to student feedback contribute to stronger loyalty (Anderson & Srinivasan, 2003; Rust et al., 1995).

Student satisfaction influences loyalty by ensuring that students' academic, social, and personal needs are met. Based on this, the following hypothesis is proposed:

H6: Student satisfaction (SS) has a significant impact on student loyalty (SL).

7. Student Loyalty (SL)

Student loyalty refers to students' ongoing commitment to their institution, shown through re-enrollment, positive word-of-mouth, and active participation (Dick & Basu, 1994; Kandampully & Suhartanto, 2000; Oliver, 1999). Loyal students not only continue their studies but also recommend the institution and engage in its activities, strengthening its long-term success and reputation (Zeithaml et al., 1996).

Research highlights several drivers of loyalty. High-quality education and services foster stronger commitment (Zeithaml et al., 1996). Emotional bonds, trust, and a sense of belonging also play a critical role in sustaining loyalty (Kim & Kim, 2004; Oliver, 1999). Institutions that adapt to changing student needs and deliver value are more likely to retain loyal students over time (Rust et al., 2000; Yoo & Donthu, 2001).

Student loyalty reflects both attitudes and behaviors that benefit institutions through retention, advocacy, and long-term relationships.

Research Framework

This study draws on three established models: Social Identity Theory (SIT), the SERVQUAL Model, and the SERVPERF Model. SIT explains how individuals derive identity from group membership, which influences their attitudes and behaviors (Hogg & Williams, 1995). SERVQUAL measures service quality by comparing expectations with actual perceptions, while SERVPERF focuses on performance as the sole indicator of service quality

(Cronin & Taylor, 1992). Both models are widely used for evaluating service quality in education and other fields.

Based on these foundations, the conceptual framework in Figure 1 examines the determinants of student satisfaction and loyalty in Jiangxi higher education institutions. Five independent variables are included: Teachers and teaching (TT), academics (AC), service delivery (SD), built environment (BE), and reputation of the university (RU). student loyalty (SL) is the dependent variable, while student satisfaction (SS) acts as a mediating factor explaining how these elements influence loyalty.



Figure 1 Conceptual Framework

Research Methodology

This study used a questionnaire survey to examine factors influencing student satisfaction and loyalty in Jiangxi higher education. The target population was junior college students at Jiangxi Polytechnic University across three majors: Finance and Accounting, Engineering, and Sergeant Management. Participation was voluntary.

The questionnaire used a 5-point Likert scale. Three experts reviewed it for content validity using the item-objective congruence (IOC) test, and a pilot test with 30 students confirmed internal consistency. Reliability was further assessed using Cronbach's alpha. Data collection produced 450 valid responses. Descriptive statistics summarized demographic characteristics, while skewness and kurtosis tests confirmed data normality. Confirmatory Factor Analysis (CFA) evaluated validity and reliability, and Structural Equation Modeling (SEM) tested the hypothesized relationships. Composite reliability, average variance extracted, factor loadings, and discriminant validity all met acceptable thresholds. Data were analyzed using JAMOMI and AMOS, and the overall model showed good fit.

Ethical approval was obtained before data collection. Students were informed of the study's purpose, assured of confidentiality, and provided consent before completing the survey.

1. Research Population and Sample Size

This study used non-probability sampling, combining judgmental and quota methods. The target population consisted of junior college students from three majors at Jiangxi Polytechnic University: Finance and Accounting, Engineering, and Sergeant Management. According to 2023 university statistics, these groups included 1,293 students in Finance and Accounting, 1,564 in Engineering, and 857 in Sergeant Management, for a total of 3,714 students.

A proportional quota sampling approach produced a final sample of 450 students: 157 from Finance and Accounting, 189 from Engineering, and 104 from Sergeant Management. Data were collected online between September and December 2024. To ensure suitability, the researchers screened responses before analysis. University administrators supported the survey by encouraging students to participate and submit valid responses.

Results and Discussion

1. Demographic Information

We collected 450 valid responses from junior college students at Jiangxi Polytechnic University. Of these, 60.4% were male, and 39.6% were female. Most respondents were aged 22–24 (50%), followed by those aged 19–21 (46.9%), while only 3.1% were aged 25–27 and none were older than 27.

All participants were junior college students. By grade level, 42.2% were sophomores, 38% were first-year students, and 19.8% were in their junior year. None were in the fourth year of college. By origin, most respondents (87.3%) were from Jiangxi Province, while 12.7% were from other provinces.

2. Confirmatory Factor Analysis (CFA)

We conducted Confirmatory Factor Analysis (CFA) to evaluate the reliability and validity of the measurement model. All factor loadings were significant ($p < 0.05$) and above 0.50, confirming that each item contributed meaningfully to its construct. Cronbach's alpha values and composite reliabilities were all greater than 0.70, indicating strong internal consistency. In addition, average variance extracted (AVE) values exceeded 0.50 for all constructs, demonstrating convergent validity.

Discriminant validity was confirmed by comparing the square roots of the AVE with the inter-construct correlations. Each construct's AVE square root was higher than its correlations with other constructs, showing that the variables were distinct.

Goodness-of-fit indices further supported the measurement model. The values fell well within recommended thresholds: CMIN/DF = 1.478, GFI = 0.925, AGFI = 0.908, NFI = 0.936, CFI = 0.978, TLI = 0.975, and RMSEA = 0.033. Together, these results indicate that the CFA model achieved both reliability and validity, providing a sound basis for testing the structural model.

Table 1 Confirmatory Factor Analysis Results

Variable	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factor Loading	CR	AVE
TT	Arif et al. (2013)	4	0.874	0.755-0.865	0.874	0.635
AC	Arif et al. (2013)	3	0.808	0.757-0.775	0.808	0.584
SD	Chandra et al. (2019)	4	0.887	0.748-0.889	0.887	0.663
BE	Benetti Corrêa da Silva et al. (2021)	4	0.852	0.740-0.811	0.853	0.592
RU	Heffernan et al. (2018)	4	0.881	0.745-0.860	0.881	0.649
SS	Othman et al. (2015)	5	0.906	0.729-0.905	0.907	0.664
SL	Mutum et al. (2023)	5	0.911	0.760-0.879	0.911	0.671

Note: Composite Reliability (CR); and Average Variance Extracted (AVE)

Table 2: Discriminant Validity Output

Variable	TT	AC	SD	BE	RU	SS	SL
TT	0.797						
AC	0.312	0.764					
SD	0.316	0.284	0.814				
BE	0.345	0.312	0.309	0.769			
RU	0.336	0.333	0.348	0.339	0.806		
SS	0.533	0.454	0.505	0.468	0.565	0.815	
SL	0.339	0.287	0.310	0.319	0.357	0.345	0.819

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

Table 3 Goodness of Fit for Confirmatory Factor Analysis and Structural Equation Model

Fit Index	Recommended Value and Source	CFA Value	SEM Value
CMIN/df	< 3.00 (Awang, 2012)	1.478	2.490
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.925	0.852
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.908	0.827
NFI	≥ 0.80 (Wu & Wang, 2006)	0.936	0.888
CFI	≥ 0.80 (Bentler, 1990)	0.978	0.930
TLI	≥ 0.80 (Sharma et al., 2005)	0.975	0.923
RMSEA	< 0.08 (Pedroso et al., 2016)	0.033	0.058

Note: CMIN/df = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, TLI = Tucker Lewis index, NFI = normalized fit index, CFI = comparative fit index, RMSEA = root mean square error of approximation

3. Structural Equation Model (SEM)

After validating the measurement model, the study applied Structural Equation Modeling (SEM) to test the hypothesized relationships among variables. The analysis was conducted using AMOS, and the model fit indices indicated that the structural model was acceptable.

The results showed that the Chi-square/df ratio (CMIN/DF = 2.490) met the criterion of being less than 3.0. Other indices also confirmed good model fit: GFI = 0.852, AGFI = 0.827, NFI = 0.888, CFI = 0.930, TLI = 0.923, and RMSEA = 0.058. All values were within acceptable ranges suggested in prior research. These results confirm that the structural model adequately represents the data and is suitable for testing the study's hypotheses.

4. Research Hypothesis Testing Result

The structural model was evaluated using standardized path coefficients (β) and t-values. All six hypotheses were supported at $p < 0.05$, confirming that each proposed factor significantly influenced student satisfaction (SS) or student loyalty (SL).

Table 4 Hypothesis Testing Result

Hypothesis	Standardized Estimate (β)	t-Value	Result
H1: TT → SS	0.358	7.443*	Supported
H2: AC → SS	0.237	5.044*	Supported
H3: SD → SS	0.309	6.752*	Supported
H4: BE → SS	0.230	5.059*	Supported
H5: RU → SS	0.412	8.282*	Supported
H7: SS → SL	0.347	6.331*	Supported

Note: * = $p < 0.05$

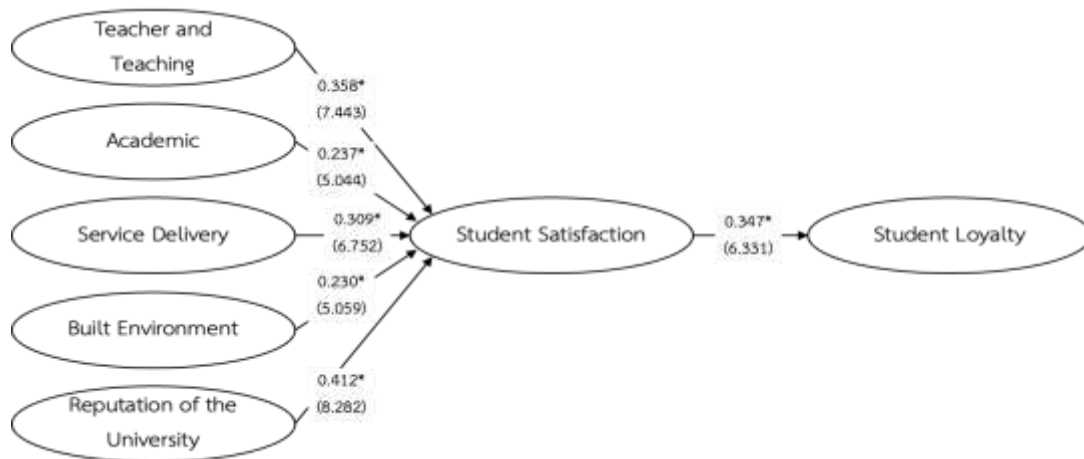


Figure 2 Path Diagram Result

Note: Solid lines represent standardized coefficients ($p < 0.05$), with t-values shown in parentheses.

Teachers and Teaching (H1) showed a strong positive effect on Student Satisfaction ($\beta = 0.358$, $t = 7.443$). This highlights the importance of teaching quality, fairness, and support in shaping students' educational experience.

Academics (H2) also significantly affected Student Satisfaction ($\beta = 0.237$, $t = 5.044$). This finding suggests that curriculum relevance, course design, and academic rigor contribute meaningfully to how students evaluate their learning outcomes.

Service Delivery (H3) had a notable influence on Student Satisfaction ($\beta = 0.309$, $t = 6.752$). Reliable administrative services, timely feedback, and effective support systems appear to improve students' perceptions of their institution.

The Built Environment (H4) contributed moderately to Student Satisfaction ($\beta = 0.230$, $t = 5.059$). This result indicates that campus facilities, safety, and overall maintenance enhance students' comfort and engagement, though they weigh less heavily than other academic or service-related factors.

Reputation of the University (H5) emerged as the strongest predictor of Student Satisfaction ($\beta = 0.412$, $t = 8.282$). Students appear to value institutional prestige, faculty expertise, and perceived career opportunities, reinforcing the role of reputation in attracting and retaining students.

Finally, Student Satisfaction significantly predicted Student Loyalty (H6) ($\beta = 0.347$, $t = 6.331$). This confirms that satisfied students are more likely to continue their studies, recommend the institution, and maintain long-term commitment.

The findings demonstrate that all five institutional factors contribute to Student Satisfaction, which in turn drives loyalty. Among these, university reputation had the greatest

influence, underscoring the importance of institutional image in shaping students' attitudes and future intentions.

Conclusions, Recommendations, Limitations and Future Research

1. Conclusions

This study examined the determinants of student satisfaction and loyalty among junior college students at Jiangxi Polytechnic University. The analysis confirmed that teaching, academics, service delivery, the built environment, and university reputation all significantly influenced satisfaction. In turn, satisfaction positively affected loyalty. Among these factors, university reputation emerged as the strongest predictor, while the built environment showed a moderate but meaningful influence.

These results align with earlier studies emphasizing the role of teaching quality, curriculum relevance, and service delivery in shaping student experiences (Chong & Ahmed, 2015; Streitwieser, 2016). The strong effect of institutional reputation also supports prior findings that prestige and image drive satisfaction and loyalty (Helgesen & Nettet, 2007).

Theoretically, this study contributes by integrating Social Identity Theory with the SERVQUAL and SERVPERF models, offering a more comprehensive framework for understanding how institutional image and service quality jointly influence student satisfaction and loyalty. This integration advances existing literature by linking emotional identification with perceived service performance.

Practically, the findings guide policymakers and administrators at Jiangxi Polytechnic University. Enhancing curriculum design to align with industry needs, improving teaching quality through professional development, and strengthening service delivery systems can directly improve student satisfaction. Upgrading the learning environment and reinforcing institutional reputation will further foster student loyalty. These insights also offer a reference point for other higher education institutions in China seeking to strengthen educational quality and competitiveness.

2. Recommendations

The findings highlight key ways to enhance student satisfaction and loyalty in higher education institutions in Jiangxi Province. Strengthening institutional reputation should remain a top priority, as it had the greatest impact. Universities can achieve this by improving academic quality, expanding research output, building stronger links with industry, and promoting graduate employability and institutional achievements.

Improving teaching and curriculum design is equally important. Faculty training, interactive teaching, and mentoring programs can enrich classroom experiences. Updating course content to reflect industry needs helps keep programs relevant and valuable. Fair treatment and timely support from teachers also strengthen students' satisfaction.

Enhancing service delivery and the campus environment is another focus. Simplifying administrative processes, providing effective counseling and advising, and maintaining modern classrooms, libraries, and social spaces help create a supportive and engaging learning setting. Upgrading facilities and technology can further improve learning efficiency.

Finally, establishing continuous feedback systems is essential. Regularly collecting and acting on student input enables universities to refine policies and allocate resources more effectively. These actions can help Jiangxi Polytechnic University, and similar institutions, strengthen educational quality, student satisfaction, and long-term loyalty.

3. Limitations and Future Research

This study has several limitations. The sample was limited to junior college students from a single institution, Jiangxi Polytechnic University, which restricts the generalizability of the findings to other higher education settings in China. The use of non-probability sampling may also introduce selection bias, as participants were not randomly chosen, which could affect the representativeness of the results. The cross-sectional design further limits the ability to observe changes in satisfaction and loyalty over time. In addition, the study focused mainly on individual-level factors, excluding broader influences such as family background, regional differences, or education policies.

Future studies could expand the sample to include multiple institutions and provinces to improve generalizability. Longitudinal research may capture how satisfaction and loyalty evolve throughout students' academic journeys. Including external variables or mediating factors such as engagement or well-being could offer a more comprehensive understanding. Mixed-method approaches that combine surveys and interviews would add depth to the findings, while comparative studies across educational systems or cultures could help identify both universal and context-specific determinants of satisfaction and loyalty.

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