# Study on the Factors Influencing the Satisfaction of Students in China's New College Entrance Examination Reform

**Jing Cheng and Boli Li**
Krirk University, Thailand.
Corresponding Author, E-mail: 254573444@qq.com

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## Abstracts

The China's new college entrance examination is a crucial stage in the scientific selection of talents by higher education institutions, and the satisfaction of students is a key criterion for evaluating the effectiveness of the new college entrance examination reform. Based on the ACSI model, this study redefines the relevant variables and their relationship model for student satisfaction based on the new college entrance examination reform. Student expectations are considered as independent variables, while perceived quality and perceived value are observed variables, and student satisfaction is the dependent variable. The study analyzes the impact effects of various factors on student satisfaction. Using a questionnaire survey method, 308 students were sampled and surveyed, and statistical analysis was conducted using SPSS 25.0 software. Based on the research findings, the study provides recommendations.

**Keywords:** New College Entrance Examination; Students; Satisfaction; Influencing Factors.

## Introduction

The college entrance examination system is the fundamental mechanism for admissions to higher education institutions in China. Investigating student satisfaction with the college entrance examination reform is a necessary approach to assess whether the national entrance and talent selection processes are scientifically rational. Through empirical investigation and analysis, this study aims to identify the influencing factors and their relationships regarding student satisfaction in the context of the new college entrance examination reform. Finding the key factors affecting student satisfaction holds significant importance for refining the new college entrance examination reform and promoting the sustainable development of higher education.

### 1.Research Background

Since the reform and opening-up, China's higher education has experienced rapid development. By the end of June 2023, China had cumulatively established 1,271 undergraduate institutions and 1,489 vocational colleges, with a total enrollment of 46.55 million students, gradually realizing the goal of mass higher education (Chinese Ministry of Education, 2023). As the primary mechanism for talent selection in higher education, the importance of the college entrance examination is evident, marking it as China's "largest examination." However, with the evolution of times, the traditional college entrance examination system implemented since 1977 has become increasingly outdated. Various sectors of society eagerly anticipate the introduction of a new examination scheme to address the shortcomings of the previous system. Therefore, since 2017, China has been gradually implementing the new college entrance examination reform, bringing about the most

* Received: February 6 2024; Revised: February 20 2024; Accepted: February 22 2024

extensive and profound reform in the history of China's college entrance examination system. This reform encompasses changes to the traditional college entrance examination's subject settings, examination methods, voluntary structures, and admission methods.

The new college entrance examination, as a novel educational policy, has garnered significant attention from students, schools, and society. Keywords such as quality, value, and satisfaction have become hot topics during the reform process. From the perspective of stakeholder theory, students, as the test-takers of the new college entrance examination, are the most important and core stakeholders in the reform. Student satisfaction reflects society's overall satisfaction with the new college entrance examination reform. The application of the American Customer Satisfaction Index (ACSI) model to the study of student satisfaction has strong feasibility. Many scholars, including Chen Xiuqun (2018) and Zhai Xiaocheng (2020), consider ACSI as an authoritative and highly reliable indicator system with strong effectiveness, fairness, and standardization. It provides a scientific, efficient, and comprehensive evaluation standard for studying student satisfaction and serves as an empirical basis for measuring the effectiveness of the new college entrance examination reform.

Against this background, this study adopts ACSI as the research foundation, conducts an empirical investigation of student satisfaction, constructs a model for studying student satisfaction, analyzes the influencing factors and their relationships, and proposes targeted improvement strategies.

**2.Literature Review**

To understand the existing literature related to this research, a comprehensive review was conducted with keywords such as "college entrance examination," "new college entrance examination," and "student satisfaction" on the China National Knowledge Infrastructure (CNKI) database. From 1983 to December 2023, a total of 124,559 relevant articles were retrieved. In general, there is a substantial amount of research on the college entrance examination, but literature focusing on student satisfaction from the perspective of the new college entrance examination reform is scarce, with limited research outcomes.

2.1 Research on the New College Entrance Examination Reform

2.1.1 Study on the Reform Process

Domestic scholars have conducted extensive historical research on the evolution of the college entrance examination system. For instance, Ge Xinbin and Fu Xinqin (2019) divided the history of the college entrance examination system into four stages: the establishment period (1949-1966), the interruption and recovery period (1967-1984), the exploration of reform period (1985-2009), and the pilot deepening period (2010-present). Similarly, Han Yafei (2019) categorized it into the initial stage and development (1949-1965), interruption and setbacks (1966-1976), recovery and development (1977-2011), and reform and enhancement (2012-present). Overall, there is a consistent categorization, and scholars have analyzed and assessed the reform of the college entrance examination system from various perspectives.

2.1.2 Study on Value Orientation

Scholars generally agree that the core value of the college entrance examination system lies in its crucial mission of selecting talents for the country. Zhang Mingkai and Jin Yule (2016) suggest that the new college entrance examination reform should consider national, societal, and individual needs. Liu Haifeng (2017) proposes that the value pursuit of the new college entrance examination reform should consistently focus on the principles of

fairness and excellence. Duan Shifei and Hong Jie (2019) argue that the fundamental value pursuit of the new college entrance examination reform is based on fairness and science. Overall, there is a widespread consensus on the values of fairness, efficiency, student-centeredness, and comprehensive development in the new college entrance examination reform.

2.1.3 Study on Examination and Admission

Research on the examination and admission aspects of the new college entrance examination can be categorized into four dimensions. First, the acknowledgment of the elimination of arts and science divisions. Abolishing the arts and science divisions breaks the limitations of the traditional division, promoting the development of students' comprehensive qualities (Bian Xinchan et al., 2017). Second, debates on subject selection. Ji Qingchun (2018) believes that the implementation of subject selection benefits students in enhancing their interest in subjects and their foundational abilities, contributing to the improvement of the quality of talent cultivation in higher education. Third, the degree of educational and teaching adaptation. Zhang Yulin and Yu Bin (2019) argue that the new college entrance examination enhances students' autonomy in subject selection, but challenges exist in resource supply, coping strategies, and decision-making abilities after subject selection. Consequently, domestic scholars have conducted in-depth exploration in areas such as subjects, educational and teaching adaptability, and student autonomy concerning the reform of the new college entrance examination.

2.1.4 Study on Impact Effects

Firstly, the impact on high school education. Shifted classroom teaching poses challenges to the supply of high school education resources, further increasing the workload of teachers and posing challenges to the management of school education (Wu Xiuxia, 2019). Students' autonomous subject selection may lead to uncertainty in the investment and adaptation of educational resources (Li Haiyan, 2019). Secondly, the impact on university admissions. Jiang Gang (2017) and Li Zhe (2019) analyze the profound impact of the new college entrance examination reform on high school education and university admissions from aspects such as policy formulation, plan allocation, and preferential policies.

2.2 Research on Student Satisfaction

2.2.1 Study on Investigative Value

Foreign researchers have conducted extensive theoretical studies on higher education admission systems. For instance, Thorndike (1904) was among the earliest to propose theories related to exam measurement in the field of education. Focusing on domestic perspectives, Li Hao et al. (2015) argue that studying student satisfaction is highly beneficial for educational justice, fairness, and social stability. In a study analyzing the current status of the skill-based college entrance examination in Hubei Province, Zhai Xiaocheng (2020) conducted a satisfaction survey, providing valuable research references. In general, scholars believe that conducting student satisfaction surveys is necessary and can yield effective policy recommendations.

2.2.2 Study on Measurement Indicators

The American Customer Satisfaction Index (ACSI) scale is an essential reference for conducting student satisfaction surveys. Numerous studies, including those by Niu Suhua (2021), Li Hao et al. (2015), Chen Xiuqun (2018), and Zhai Xiaocheng (2020), reflect that there is no mature and complete indicator system for student satisfaction surveys, with various researchers proposing different sets of one-level, two-level, and three-level indicators.

2.2.3 Study on Impact Mechanism

Since the 21st century, domestic scholars have gradually applied the basic framework of ACSI to the impact mechanism of student satisfaction. Gao Xia (2013) designed five structural variables for the satisfaction survey of new college students; Li Hao et al. (2015) constructed the "Measurement Model of Satisfaction with College Entrance Examination"; Li Yao (2019) built five structural variables to explore the impact mechanism of student satisfaction; Zhai Xiaocheng (2020) explored the interaction and impact mechanism of high school entrance examination policies based on three structural variables. From the perspective of research results, the construction and selection of relevant variable relationship models for student satisfaction are generally based on the experience of ACSI.

2.2.4 Study on Scale Tools

Research on measurement tools for student satisfaction surveys is relatively insufficient, with few domestic and foreign scholars delving into questionnaire surveys on student satisfaction. Domestically, Liang Shuang (2008) used a 9-point symmetrical equidistant scale to design an 11-item questionnaire. Li Huaping (2011) conducted an open-ended questionnaire survey from six dimensions. Niu Suhua (2021)conducted a survey on the satisfaction of freshmen in the college entrance examination with a self-designed 7-item questionnaire. Zhai Xiaocheng (2020) borrowed from the Liker 5-level scale and designed a 20-item questionnaire in five sections. In summary, the survey questionnaires are primarily self-developed, and a mature measurement tool has yet to be formed.

## 3. Research Design

3.1 Research Model

Drawing inspiration from the structural format of the ACSI model, this study has designed the structural model of factors influencing student satisfaction, as illustrated in Figure 1. The model comprises four variables: Student Expectations, Perceived Quality, Perceived Value, and Student Satisfaction. Various relationships between these variables are depicted by arrows in the diagram. Based on these relationships, seven research hypotheses have been formulated.

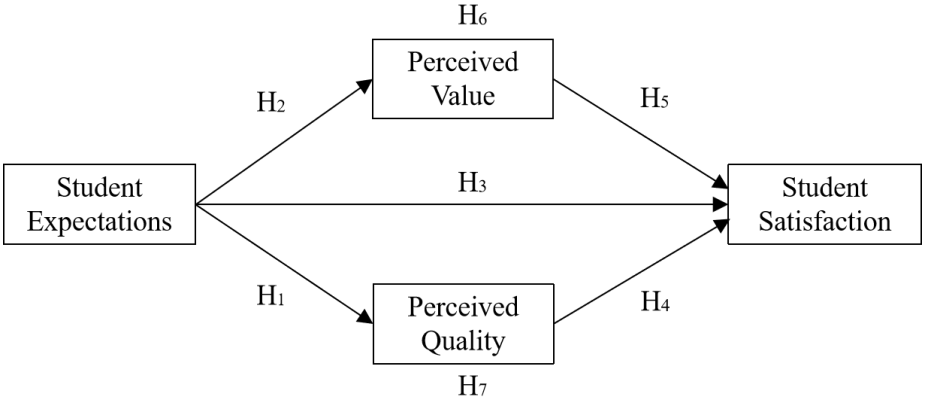


**Figure 1.** Research Model

$H_1$: Student expectations have a positive impact on perceived quality.

$H_2$: Student expectations have a positive impact on perceived value.

$H_3$: Student expectations have a positive impact on student satisfaction.

$H_4$: Perceived quality has a positive impact on student satisfaction.

$H_5$: Perceived value has a positive impact on student satisfaction.

$H_6$: Perceived value is a mediating variable in the relationship between student expectations and student satisfaction.

$H_7$: Perceived quality is a mediating variable in the relationship between student expectations and student satisfaction.

3.2 Research Subjects

The study focuses on Chinese students who participated in the 2023 new college entrance examination. Convenient sampling was employed, and 350 questionnaires were distributed to first-year students in 10 universities in Chongqing in October 2023. A total of 326 questionnaires were collected, with 308 valid responses (94.5% response rate). Among them, 227 were from vocational education students, and 81 were from undergraduate students.

3.3 Research Methods

This study utilized a questionnaire survey method and employed SPSS 25.0 software to explore the influencing factors of student satisfaction in the context of the new college entrance examination reform. The research methods included reliability analysis, descriptive statistical analysis, Pearson correlation analysis, independent sample t-tests, and regression analysis.

3.4 Research Tools

Given the limited empirical research on student satisfaction in the context of the new college entrance examination reform, the study adopted a combination of literature citation and self-made questionnaires, drawing from the ACSI theory. Four variables were measured using expectation, perceived quality, perceived value, and student satisfaction questionnaires. The Likert scale with five levels was chosen for the questionnaire, with higher scores indicating higher satisfaction. The questionnaires demonstrated high reliability, with Cronbach's alpha coefficients ranging from 0.872 to 0.959 for the four variables and an overall alpha coefficient of 0.962.

3.4.1 Expectation Questionnaire

Student expectations in this study refer to psychological expectations regarding the fairness, justice, openness, suitability for individuals, schools, and locations of the new college entrance examination reform. It includes overall expectations and personalized expectations. The questionnaire, measuring expectations from four dimensions (fair system design, transparent enrollment information, fair admission process, and expected admission results), consists of eight items.

3.4.2 Perceived Quality Questionnaire

Perceived quality, in the context of this study, pertains to students' subjective perceptions of the image, proposition, information, preferences, evaluation, and services related to the new college entrance examination reform. The questionnaire, measuring perceived quality from seven dimensions (public image, information transparency, enrollment services, enrollment plans, proposition quality, preference setting, and admission evaluation), consists of twelve items.

3.4.3 Perceived Value Questionnaire

The perceived value of the new college entrance examination reform is

primarily reflected in its scientific and rational aspects. The questionnaire, measuring perceived value from three dimensions (scientific orientation, reasonable rules, and practical conformity), consists of nine items.

3.4.4 Student Satisfaction Questionnaire

Student satisfaction, in this study, represents an overall response to the new college entrance examination reform, encompassing general satisfaction, satisfaction with admission, service satisfaction, trust, and recommendation. The questionnaire, measuring student satisfaction from four dimensions (overall satisfaction, admission satisfaction, service satisfaction, trust and recommendation), consists of eight items.

**Table 1.** Reliability Statistics

| Variables | Cronbach's Alpha | KMO | Cumulative Explained Variance |
|---|---|---|---|
| Student Expectations | 0.962 | 0.959 | 69.02% |
| Perceived Value | 0.882 | 0.872 | 68.09% |
| Perceived Quality | 0.937 | 0.927 | 73.12% |
| Student Satisfaction | 0.922 | 0.902 | 71.48% |

## 4.Research Analysis

Based on the aforementioned research methods and tools, this study conducted empirical measurements on the samples, and the collected data and discussions are elaborated as follows.

4.1 Common Method Bias Test

Following the suggestion of Zhou and Long (2004), the Harman's single-factor test was employed to examine common method bias. The results indicated that the variance explained by the first factor was 36.53%, which is below the critical value of 40%. Therefore, this study does not suffer from significant common method bias.

4.2 Descriptive Statistics and Correlation Analysis of Variables

Firstly, descriptive statistics were employed to analyze the mean and standard deviation of the variables Student Expectations, Perceived Quality, Perceived Value, and Student Satisfaction. Subsequently, Pearson correlation analysis was conducted on these variables, revealing positive correlations between each pair of variables. Student Expectations and Perceived Value exhibited a significantly positive correlation ($r=0.461$, $p<0.01$), indicating that higher Student Expectations correspond to higher Perceived Value scores. Similarly, Student Expectations and Perceived Quality showed a significant positive correlation ($r=0.549$, $p<0.01$), implying that higher Student Expectations correspond to higher Perceived Quality. Additionally, Student Expectations and Student Satisfaction displayed a significant positive correlation ($r=0.461$, $p<0.01$), signifying that higher Student Expectations result in higher satisfaction scores.

**Table 2.** Basic Information Statistics Table

| Variables | Basic Statistics | | | Correlation Coefficient | | | |
|---|---|---|---|---|---|---|---|
| | M | SD | N | Student Expectations | Perceived Value | Perceived Quality | Student Satisfaction |
| Student Expectations | 3.357 | 0.724 | 308 | 1 | | | |
| Perceived Value | 3.179 | 0.607 | 308 | .461** | 1 | | |
| Perceived Quality | 3.265 | 0.590 | 308 | .549** | .665** | 1 | |
| Student Satisfaction | 3.463 | 0.547 | 308 | .461** | .653** | .766** | 1 |

**Note:** * p < 0.05; ** p < 0.01; *** p < 0.001.

4.3 Analysis of Variability among Variables

4.3.1 Gender Variable Analysis of Differences

In this study, male and female students were taken as independent variables, and an independent samples T-test was conducted to analyze the significant differences in Student Expectations, Perceived Quality, Perceived Value, and Student Satisfaction based on gender. The specific differences are detailed in Table 3.

**Table 3.** Analysis of Significant Differences in Gender Variables

| Variables | Gender | Number of cases | Mean | Standard Deviation | *t* | *p* |
|---|---|---|---|---|---|---|
| Student Expectations | Male | 75 | 3.424 | 0.874 | 0.801 | 0.425 |
| | Female | 233 | 3.335 | 0.67 | | |
| Perceived Value | Male | 75 | 3.288 | 0.738 | 1.56 | 0.122 |
| | Female | 233 | 3.143 | 0.556 | | |
| Perceived Quality | Male | 75 | 3.397 | 0.741 | 1.892 | 0.061 |
| | Female | 233 | 3.223 | 0.528 | | |
| Student Satisfaction | Male | 75 | 3.55 | 0.62 | 1.452 | 0.149 |
| | Female | 233 | 3.435 | 0.52 | | |

**Note:** * p < 0.05; ** p < 0.01; *** p < 0.001.

According to Table 3, in the overall ranking of Student Expectations, the t-value between male and female students is 0.801, with a p-value of 0.425, indicating no significant difference in Student Expectations between different genders. In the overall ranking of Perceived Value, the t-value between male and female students is 1.560, with a p-value of 0.122, indicating no significant difference in Perceived Value among students of different genders. In the overall ranking of Perceived Quality, the t-value between male and female students is 1.892, with a p-value of 0.061, indicating no significant difference in Perceived Quality among students of different genders. In the overall ranking of Student Satisfaction, the t-value between male and female students is 1.452, with a p-value of 0.149, suggesting no significant difference in Student Satisfaction between different genders.

4.3.2 Regional Origin Variable Analysis

This study uses rural and urban areas as independent variables to analyze the significant differences in Student Expectations, Perceived Quality, Perceived Value, and Student Satisfaction based on different regional origins. Independent sample T-tests were applied for statistical analysis to examine the differences based on regional origins. Details of the differences are presented in Table 4.

**Table 4.** Analysis of Significant Differences in Variables Based on Regional Origin

| Variables | Place of Origin | Number of cases | Mean | Standard Deviation | t | p |
|---|---|---|---|---|---|---|
| Student Expectations | Rural | 205 | 3.509 | 0.697 | 5.464*** | $P<0.001$ |
| | Urban | 103 | 3.055 | 0.684 | | |
| Perceived Value | Rural | 205 | 3.214 | 0.605 | 1.433 | 0.153 |
| | Urban | 103 | 3.109 | 0.609 | | |
| Perceived Quality | Rural | 205 | 3.325 | 0.585 | 2.525* | 0.012 |
| | Urban | 103 | 3.146 | 0.586 | | |
| Student Satisfaction | Rural | 205 | 3.486 | 0.542 | 1.069 | 0.286 |
| | Urban | 103 | 3.416 | 0.556 | | |

**Note:** * p < 0.05; ** p < 0.01; *** p < 0.001.

From Table 4, it can be seen that in the overall ranking of Student Expectations, the t-value between rural and urban areas is 5.464, with a p-value of <0.001, indicating a significant difference in Student Expectations between rural and urban areas, with rural students scoring higher than urban ones; in the overall ranking of Perceived Value, the t-value between rural and urban areas is 1.433, with a p-value of 0.153, indicating no significant difference in Perceived Value between rural and urban students; in the overall ranking of Perceived Quality, the t-value between rural and urban areas is 2.525, with a p-value of 0.012, indicating a significant difference in Perceived Quality between rural and urban areas, with urban students scoring lower than rural ones; in the overall ranking of Student Satisfaction, the t-value between rural and urban areas is 1.069, with a p-value of 0.286, indicating no significant difference in Student Satisfaction between rural and urban areas.

4.3.3 Analysis of Differences in Admission Levels

This study takes the undergraduate level and college level as independent variables, conducting a significance difference analysis on Student Expectations, Perceived Quality, Perceived Value, and Student Satisfaction for different admission levels. Independent sample T-tests were employed for statistical analysis to examine the differences among various admission levels. Details of the differences are presented in Table 5.

**Table 5.** Analysis of Significant Differences in Admission Levels

| Variables | Admission Level | Number of cases | Mean | Standard Deviation | t | p |
|---|---|---|---|---|---|---|
| Student Expectations | college level | 227 | 3.168 | 0.640 | -8.483*** | 0.000 |
| | undergraduate level | 81 | 3.885 | 0.688 | | |
| Perceived Value | college level | 227 | 3.093 | 0.553 | -3.823*** | 0.000 |
| | undergraduate level | 81 | 3.417 | 0.687 | | |
| Perceived Quality | college level | 227 | 3.175 | 0.526 | -4.084*** | 0.000 |
| | undergraduate level | 81 | 3.517 | 0.684 | | |
| Student Satisfaction | college level | 227 | 3.377 | 0.518 | -4.780*** | 0.000 |
| | undergraduate level | 81 | 3.704 | 0.558 | | |

**Note:** * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 5 indicates that in the overall ranking of Student Expectations, the t-value between the college level and undergraduate level is -8.483, $p < 0.001$, suggesting a significant difference in Student Expectations between the two levels, with higher scores for undergraduate level students. In the overall ranking of Perceived Value, the t-value between the college level and undergraduate level is -3.823, $p < 0.001$, indicating a significant difference in Perceived Value between college and undergraduate levels, with higher scores for undergraduate level students. In the overall ranking of Perceived Quality, the t-value between the college level and undergraduate level is -4.084, $p < 0.001$, suggesting a significant difference in Perceived Quality between college and undergraduate levels, with higher scores for undergraduate level students. In the overall ranking of Student Satisfaction, the t-value between the college level and undergraduate level is -4.780, $p < 0.001$, indicating a significant difference in Student Satisfaction between the two levels, with higher scores for undergraduate level students.

4.4 Mediation Analysis

4.4.1 Mediation Effect Test for Perceived Value

This study employed the SPSS macro program developed by Hayes and Preacher (2013). Controlling for gender and hometown type, we explored the mediating effect of Perceived Value between Student Expectations and Student Satisfaction. Using the SPSS 25.0 Process V4.0 program, we set the bootstrap sample to 5000 and conducted a significance test for the mediation effect using the bootstrap method, with a confidence interval set at 95%.

**Table 6.** Regression Analysis of the Mediation Model for Perceived Value

| Dependent Variable | Independent Variable | *β* | SE | t | *p* | LLCI | ULCI |
|---|---|---|---|---|---|---|---|
| Perceived Value | constant | 1.928 | 0.233 | 8.279 | 0.000 | 1.470 | 2.386 |
| | Student Expectations | 0.400 | 0.044 | 9.013 | 0.000 | 0.313 | 0.487 |
| | Gender | -0.119 | 0.072 | -1.655 | 0.099 | -0.260 | 0.022 |
| | Place of Origin | 0.087 | 0.068 | 1.279 | 0.202 | -0.047 | 0.222 |
| | R | 0.472 | | R-sq | | 0.223 | |
| | F | 29.121*** | | P | | 0.000 | |
| Student Satisfaction | constant | 1.305 | 0.194 | 6.735 | 0.000 | 0.923 | 1.686 |
| | Student Expectations | 0.166 | 0.038 | 4.420 | 0.000 | 0.092 | 0.240 |
| | Perceived Value | 0.498 | 0.043 | 11.548 | 0.000 | 0.413 | 0.583 |
| | Gender | -0.035 | 0.054 | -0.644 | 0.520 | -0.141 | 0.072 |
| | Place of Origin | 0.060 | 0.051 | 1.168 | 0.244 | -0.041 | 0.161 |
| | R | 0.679 | | R-sq | | 0.461 | |
| | F | 64.823*** | | P | | 0.000 | |

**Note:** The dependent variable in Model 1 is perceived value, and the dependent variable in Model 2 is student satisfaction.

After running, the model summary is shown in Table 6. The regression model is divided into two models, Model 1 and Model 2, with R-squared values of 0.223 and 0.461, respectively. This indicates that the explanatory power of Model 1 and Model 2 is 22.3% and 46.1%, respectively. The F-values are both significant ($p < 0.001$), indicating that both models are statistically significant.

As shown in Table 6, in Model 1, Student Expectations has a significant positive impact on Perceived Value ( β = 0.400, p < 0.001, CI = [0.313, 0.487]); in Model 2, Perceived Value has a significant positive impact on Student Satisfaction ( β = 0.498, p < 0.001, CI = [0.413, 0.583]), and the impact of Student Expectations on Student Satisfaction is significant ( β = 0.166, p < 0.001, CI = [0.092, 0.240]). In Model 2, the indirect effect of Perceived Value on Student Satisfaction between Student Expectations and Student Satisfaction is 0.199, with a confidence interval of [0.139, 0.268], not including 0, indicating the presence of an intermediate effect. Therefore, Perceived Value has a partial mediating effect between Student Expectations and Student Satisfaction, with an intermediate effect of 0.199. The total effect is 0.365, and the proportion of the mediating effect is 54.52%.

4.4.2 Mediation Effect Test of Perceived Quality

Controlling for gender and rural-urban status, explore the mediating role of Perceived Quality between Student Expectations and Student Satisfaction. Taking Student Expectations as the independent variable (X), Perceived Quality as the mediating variable (M), and Student Satisfaction as the dependent variable (Y), use the SPSS 25.0 Process V4.0 program with 5000 bootstrap samples to test the significance of the mediation effect, setting the confidence interval to 95%.

**Table 7.** Regression Analysis of the Mediation Model for Perceived Quality

| Dependent Variable | Independent Variable | β | SE | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|---|
| Perceived Quality | constant | 1.947 | 0.213 | 9.138 | 0.000 | 1.527 | 2.366 |
| | Student Expectations | 0.450 | 0.041 | 11.089 | 0.000 | 0.370 | 0.530 |
| | Gender | -0.139 | 0.066 | -2.118 | 0.035 | -0.268 | -0.010 |
| | Place of Origin | 0.038 | 0.062 | 0.616 | 0.538 | -0.084 | 0.161 |
| | R | 0.558 | | R-sq | | 0.312 | |
| | F | 45.901*** | | P | | 0.000 | |
| Student Satisfaction | constant | 0.942 | 0.172 | 5.491 | 0.000 | 0.605 | 1.280 |
| | Student Expectations | 0.059 | 0.034 | 1.728 | 0.085 | -0.008 | 0.127 |
| | Perceived Quality | 0.679 | 0.041 | 16.590 | 0.000 | 0.598 | 0.760 |
| | Gender | 0.000 | 0.047 | 0.009 | 0.993 | -0.092 | 0.093 |
| | Place of Origin | 0.077 | 0.045 | 1.737 | 0.083 | -0.010 | 0.165 |
| | R | 0.770 | | R-sq | | 0.593 | |
| | F | 110.520*** | | P | | 0.000 | |

**Note:** The dependent variable in Model 1 is perceived quality and the dependent variable in Model 2 is student satisfaction.

After running, the model summary is shown in Table 7. The regression model is divided into two models, Model 1 and Model 2, with R-squared values of 0.312 and 0.593, indicating explanatory power of 31.2% and 59.3%, respectively. The F-values for both models are significant (p < 0.001), indicating the statistical significance of the models.

As shown in Table 7, in Model 1, Student Expectations has a significant positive impact on Perceived Quality ( β = 0.450, p < 0.001, CI = [0.370, 0.530]). In Model 2, Perceived Quality has a significant positive impact on Student Satisfaction ( β = 0.679, p < 0.001, CI = [0.598, 0.760]), and the impact of Student Expectations on Student Satisfaction is also significant ( β = 0.059, p < 0.001, CI = [-0.008, 0.127]). In Model 2, the indirect effect of

Perceived Quality between Student Expectations and Student Satisfaction is 0.306, with a confidence interval of [0.235, 0.379], not including 0, indicating the presence of a mediating effect. Therefore, Perceived Quality exhibits a complete mediating effect between Student Expectations and Student Satisfaction, with a mediating effect of 0.306, a total effect of 0.365, and a mediating effect ratio of 83.84%.

4.5 Hypothesis Verification

This study analyzed the impact of Student Expectations, Perceived Quality, and Perceived Value on Student Satisfaction using SPSS 25.0. Through correlation analysis, it is found that Student Expectations has a significant positive impact on Perceived Quality, Perceived Value, and Student Satisfaction, while Perceived Quality and Perceived Value have a significant positive impact on Student Satisfaction. Through difference analysis, it is found that gender and hometown do not have a significant impact on Student Satisfaction. However, the admission level has a significant impact, with undergraduate satisfaction higher than that of college, and satisfaction increasing with the quality of the admitted institution and major. Controlling for gender and hometown type, regression analysis reveals that Perceived Value partially mediates between Student Expectations and Student Satisfaction, suggesting that the new college entrance examination system, as a new selection system, needs long-term revisions to reflect its reform value. Perceived Quality completely mediates between Student Expectations and Student Satisfaction, indicating that students pay more attention to the system design, implementation process, and admission results of the new college entrance examination. The analysis validates the relevant hypotheses, as shown in Table 8.

**Table 8.** Research Hypothesis Verification Results

| Number | Research Hypotheses | Hypothesis Results |
|---|---|---|
| $H_1$ | Student expectations have a positive impact on perceived quality. | Hypothesis Supported |
| $H_2$ | Student expectations have a positive impact on perceived value. | Hypothesis Supported |
| $H_3$ | Student expectations have a positive impact on student satisfaction. | Hypothesis Supported |
| $H_4$ | Perceived quality has a positive impact on student satisfaction. | Hypothesis Supported |
| $H_5$ | Perceived value has a positive impact on student satisfaction. | Hypothesis Supported |
| $H_6$ | Perceived value is a mediating variable in the relationship between student expectations and student satisfaction. | Hypothesis Supported |
| $H_7$ | Perceived quality is a mediating variable in the relationship between student expectations and student satisfaction. | Hypothesis Supported |

## Conclusions

1. Satisfaction Level

The satisfaction level of students with the new college entrance examination reform is 3.463, ranging from generally satisfied to relatively satisfied.

2. Factors Influencing Satisfaction

2.1 Conclusion of Factor Correlation Analysis

Firstly, Student Expectations, Perceived Quality, and Perceived Value have a significant positive impact on Student Satisfaction, indicating that higher scores in Student Expectations are associated with higher scores in Perceived Quality and Perceived Value, resulting in higher Student Satisfaction.

Secondly, Perceived Value plays a partial mediating role between Student Expectations and Student Satisfaction. When Perceived Value is not included in the analysis model, Student Expectations has a highly significant predictive effect on Student Satisfaction (predictive effect is 0.365). When Perceived Value is included in the analysis model, although Student Expectations can still directly predict Student Satisfaction, the predictive effect decreases to 0.166. The Bootstrap test reveals that Perceived Value has a partial mediating effect between Student Expectations and Student Satisfaction, indicating that higher Student Expectations can effectively enhance Perceived Value, thereby improving Student Satisfaction.

Thirdly, Perceived Quality has a complete mediating effect between Student Expectations and Student Satisfaction. When Perceived Quality is not included in the analysis model, Student Expectations has a highly significant predictive effect on Student Satisfaction (predictive effect is 0.365). When Perceived Quality is included in the analysis model, the predictive effect of Student Expectations on Student Satisfaction becomes non-significant (reducing to 0.059). Through Bootstrap testing, it is determined that Perceived Quality serves as a complete mediator between Student Expectations and Student Satisfaction, indicating that when Student Expectations, Perceived Quality, and Student Satisfaction are simultaneously included in the model, Student Expectations significantly influence Student Satisfaction through perceived quality.

2.2 Conclusion of Factor Differences Analysis

Firstly, regarding gender differences, there is no significant difference in Student Expectations, Perceived Quality, Perceived Value, and Student Satisfaction.

Secondly, in terms of differences in the place of origin, there is a significant difference in Student Expectations, with rural students having higher scores than urban student. Perceived Value shows no significant difference based on the place of origin. Perceived Quality exhibits a significant difference based on the place of origin, with urban students scoring lower than rural students. Student Satisfaction shows no significant difference based on the place of origin.

Thirdly, concerning differences in admission level, there is a significant difference in Student Expectations, with undergraduate students having higher scores than college-level students. Perceived Value shows a significant difference based on admission level, with undergraduate students scoring higher than college-level students. Perceived Quality exhibits a significant difference based on admission level, with undergraduate students scoring higher than college-level students. Student Satisfaction shows a significant difference based on admission level, with undergraduate students having higher scores than college-level students.

## Recommendations

Based on the above research conclusions, the following optimization recommendations are proposed to enhance student satisfaction with the new college entrance examination reform:

Firstly, adhere to the principle of student-centered education. Educational authorities should highlight the student-centered approach, emphasizing fairness, justice, and transparency in the new college entrance examination reform to enhance societal recognition. Universities should closely align with the needs of Students and society, optimize enrollment plans, improve educational standards, and enhance the attractiveness of schools and majors. High schools should adhere to the concept of comprehensive and quality education, improve students' academic abilities, strengthen career guidance education, guide Students to adjust

expectations scientifically, and submit preferences based on their actual situation.

Secondly, optimize system design. Educational authorities and universities should start from five core concepts: human-oriented, functional, fair, efficient, and governance-oriented. Optimize the operation mechanism of the relatively separate enrollment and examination system, moderately expand the discretion of universities in enrollment, optimize preferential policies for adjusting scores, and improve the scientific and rational aspects of the new college entrance examination system from the perspectives of elective subjects, plan formulation, exam proposition, preference submission, and admission rules.

Thirdly, improve service levels. Educational authorities, examination agencies, universities, and high schools should further prioritize Student needs, continuously enhance the service capabilities of policy interpretation, enrollment promotion, academic counseling, and preference guidance related to the new college entrance examination. Innovate service methods, make full use of new media, information technology, and intelligent means to improve the convenience of Student enrollment consultation, information retrieval, and complaint appeals, promoting satisfaction with the entire process of participating in the new college entrance examination.

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