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Survey on Satisfaction with Primary School After-School Services and Optimization Strategies Based on the CCSI Model——A Case Study of Y Education Group in City C, Province H

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Abstract

As an essential measure for implementing China's "Double Reduction" policy, after-class services play a crucial role in determining the effectiveness of the policy's outcomes. Under this policy context, after-class services embody multiple values: meeting people's aspirations for a better life, improving the public education system, fostering a healthy educational ecosystem, providing education that satisfies the people, and enhancing overall education quality. This study applies the China Customer Satisfaction Index (CCSI) model to investigate parents' satisfaction with after-class services in several primary schools in C City. A total of 1,297 valid responses were collected through questionnaires, and data were analyzed using SPSS and AMOS software through structural equation modeling (SEM). The results indicate that policy image, perceived quality, and policy expectations have significant positive effects on parental satisfaction, whereas the relationship between perceived quality and loyalty is relatively weak. Based on these findings, the study proposes three key optimization strategies: (1) establishing a dynamic monitoring and feedback mechanism, (2) optimizing the structure of after-class service provision, and (3) strengthening policy communication and value alignment. These strategies aim to improve the quality of after-class services and effectively alleviate the so-called "3:30 p.m. problem."

Keywords:

"3:30 p.m. problem," after-class services, satisfaction theory

1. Policy Background

On February 24, 2017, the Ministry of Education issued the Guidelines on Strengthening After-School Services for Primary and Secondary School Students to address the long-standing social issue of "students finishing school earlier than their parents finish work."[1] As one of China's major education provinces, Hunan took the lead in implementing after-school service reforms. In 2021, the province introduced the Interim Measures for After-School Services in Primary and Secondary Schools, which required local governments to formulate tailored implementation plans based on regional realities and to promote flexible approaches such as "one district, one plan" and "one school, one strategy" to achieve dynamic service provision.

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Building on this policy framework, Changsha City further innovated by introducing a "home-school-community collaborative education" model, integrating resources from families, schools, and social organizations to explore new pathways for after-school services.[2] According to public data released by the Changsha Municipal Education Bureau in 2023, the city has achieved a 100% coverage rate of after-school services across all primary and secondary schools, marking a significant milestone in policy implementation.

The author conducted a questionnaire survey among parents from the Y Education Group in C City to examine parental satisfaction with after-school service delivery. This empirical investigation provided a clear understanding of the current implementation status and effectiveness of these programs.

2. The CCSI Model

The Swedish Customer Satisfaction Barometer (SCSB), established in 1989, marked a milestone in the study of consumer behavior. It was the first model to propose a systematic evaluation framework and innovatively demonstrated a linear relationship between customer satisfaction and brand loyalty, laying the theoretical foundation for subsequent research. Building upon the SCSB, American scholar Claes Fornell developed the American Customer Satisfaction Index (ACSI), which has since become one of the most widely applied models globally.

In recent years, China has localized and extended these theoretical foundations to create the China Customer Satisfaction Index (CCSI) model. The CCSI model consists of six structural variables: brand image, expected quality, perceived quality, perceived value, customer satisfaction, and customer loyalty.

Through contextual adaptation, the CCSI model better reflects the characteristics of Chinese social and cultural conditions. Its localization ensures that the model effectively captures parents' specific concerns and expectations regarding after-school service policies, thereby improving the accuracy and reliability of research outcomes. Accordingly, this study adopts the CCSI model as its theoretical framework.[3]

3. Construction of the After-School Service Satisfaction Model

Based on the CCSI framework, this study develops a Parental Satisfaction Model for After-School Services, which includes six variables and eleven hypothesized paths. These hypotheses are proposed as follows:

H1: Brand image has a direct positive effect on expected quality.

H2: Brand image has a direct positive effect on perceived quality.

H3: Brand image has a direct positive effect on perceived value.

H4: Brand image has a direct positive effect on user satisfaction.

H5: Expected quality has a direct positive effect on perceived quality.

H6: Expected quality has a direct positive effect on perceived value.

H7: Expected quality has a direct positive effect on user satisfaction.

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H8: Perceived quality has a direct positive effect on perceived value.

H9: Perceived quality has a direct positive effect on user satisfaction.

H10: Perceived value has a direct positive effect on user satisfaction.

H11: User satisfaction has a direct positive effect on user loyalty.

These relationships are illustrated in Figure 1, with detailed variable levels summarized in Table 1.

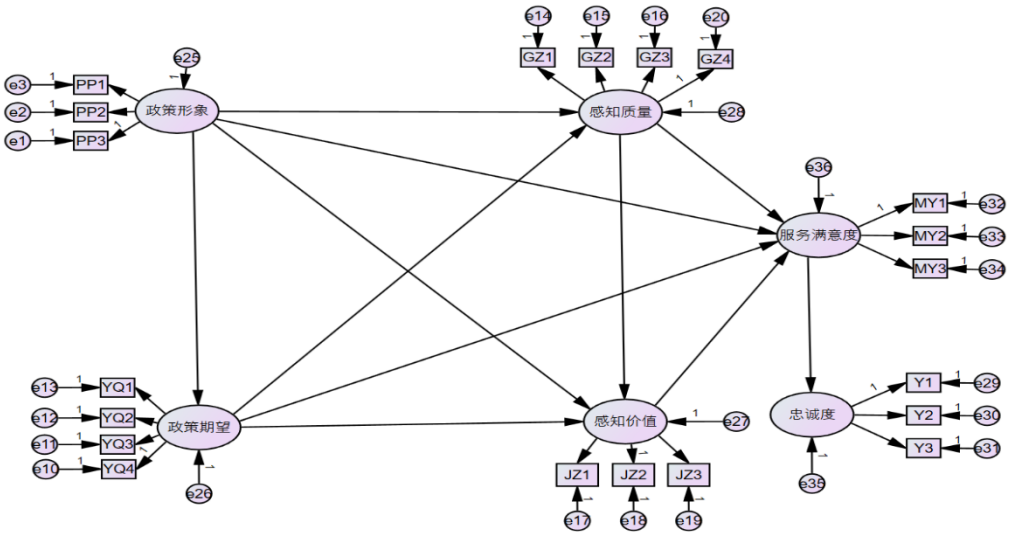


Figure 1. After-School Service Satisfaction Model

Table 1. Indicators of the After-School Service Satisfaction Model

Primary Indicators	Secondary Indicators	Tertiary Indicators
Customer Satisfaction Indicators	**Brand Image**	Public Awareness
		Public Perceived Value
		Public Favorability
	Customer Expectations	Expectation for Personalized Services
		Expectation for Service Reliability
		Expectation for Service Quality
		Overall Expectation
	Perceived Quality	Perception of Service Personalization
		Perception of Service Reliability
		Perception of Service Quality
		Overall Perception
	Perceived Value	Evaluation of Service Relative to Price
		Evaluation of Price Relative to Service
		Overall Value Perception
	Customer Satisfaction	Satisfaction Compared with Expected Level
		Satisfaction Compared with Ideal Level
		Overall Satisfaction
	Customer Loyalty	Likelihood of Recommending to Others
		Tolerance for Price Changes
		Likelihood of Repeated Use

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3. Structural Equation Modeling and Data Analysis

3.1 Data Collection and Preprocessing

The questionnaire was designed using the five-point Likert scale developed by American social psychologist Rensis Likert, and specific questions were constructed according to the tertiary indicators of user satisfaction. The survey was conducted in C City, H Province, targeting parents from six primary schools as the overall research sample. Data were collected online through parent WeChat groups. Over a 15-day period, 1,580 questionnaires were distributed, and after removing invalid responses, 1,297 valid questionnaires were obtained, yielding an effective response rate of 82.09%.

The data were analyzed using SPSS 24.0. Reliability analysis of the policy evaluation scale was conducted using Cronbach's α coefficient and item–total correlation tests. The results indicated good overall reliability across all scales ($\alpha > 0.7$), with a total Cronbach's α of 0.843, suggesting that the questionnaire demonstrated strong internal consistency and validity.

Regarding construct validity, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were performed. The KMO value was 0.836, exceeding the recommended threshold of 0.7, and the Bartlett's test yielded a p-value of 0.000, indicating that the data were suitable for factor analysis. Through exploratory factor analysis, six principal components were extracted from the 20 survey items, explaining 73.801% of the total variance. This demonstrates that the six components effectively captured the major information underlying all variables in the questionnaire.

3.2 AMOS Model Estimation

To test the proposed hypotheses, this study employed a Structural Equation Model (SEM). SEM is a multivariate statistical technique that analyzes the relationships among variables based on the covariance matrix, integrating factor analysis, multiple regression, and path analysis. Model estimation was performed using the Maximum Likelihood Estimation (MLE) method. To assess model fit, several indices were adopted, including CMIN/DF, RMSEA, SRMR, NFI, CFI, TLI, and IFI.[4]

Table 2 Model Testing

Index	DF	P	χ^2/DF	GFI	RMSEA	RMR	CFI	NFI	NNFI
Criteria	–	>0.05	Excellent < 3; Acceptable < 5	>0.90	<0.08	<0.05	>0.90	>0.90	>0.90
Results	715.154	160	0.000***	4.47	0.937	0.058	0.039	0.948	0.937

Note: ***, **, and * indicate significance levels of 1%, 5%, and 10%, respectively.

From Table 2, it can be observed that the chi-square to degrees of freedom ratio is less than 5, meeting the acceptable standard. The indices GFI, CFI, NFI, and NNFI all exceed 0.9, while RMSEA is below 0.08 and RMR is below 0.05. Therefore, all model fit indicators fall within the ideal range. In summary, the overall model fit indices meet the statistical requirements, indicating that the structural equation model (SEM) developed in this study is valid and exhibits a good fit with the collected data. The model thus passes the goodness-of-fit test and can be used to assess parents' satisfaction with after-school service policies in City C. The final

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fitted model is presented in Figure 2, which demonstrates a satisfactory overall fit, with all structural paths among latent variables showing significant relationships.

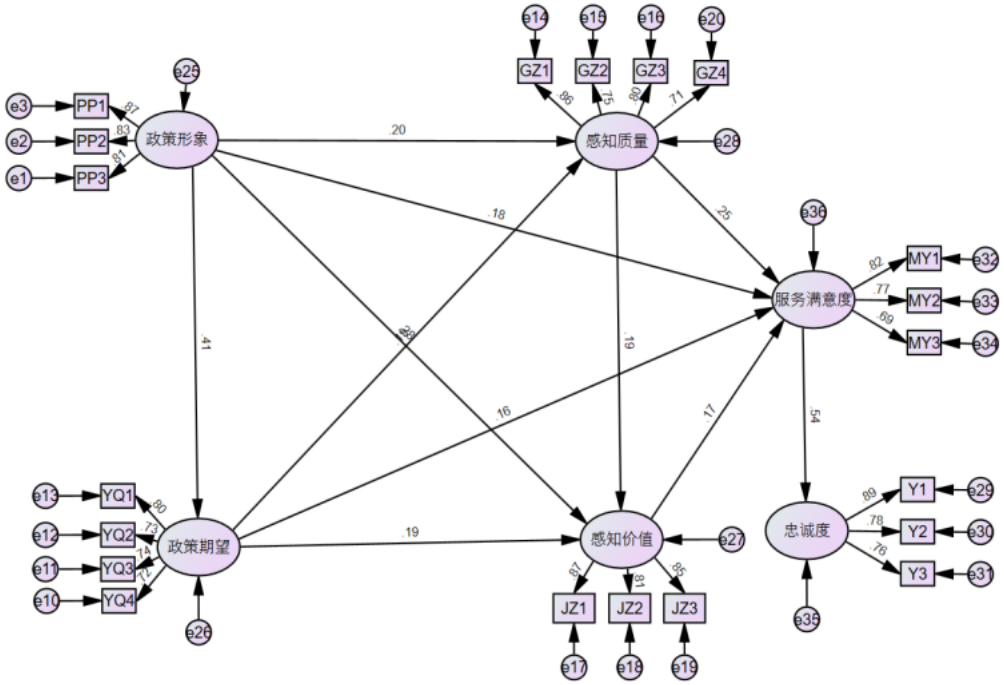


Figure 2. AMOS Path Diagram of the Parental Satisfaction Model for After-School Services

3.3 Interpretation of After-School Service Satisfaction

Based on the above results, the following conclusions can be drawn.

In terms of the direct effects of various influencing factors on parental satisfaction, the effect sizes (from highest to lowest) are as follows: perceived quality (0.25), government image (0.18), perceived value (0.17), and policy expectation (0.16). This indicates that parents' satisfaction with after-school services primarily depends on the quality of services provided by schools. Policy expectation, government image, and perceived value also play important roles in shaping overall satisfaction. Furthermore, service satisfaction exerts a strong direct effect on loyalty ($\beta = 0.615$, $p < 0.001$). An increase of one unit in satisfaction leads to a 0.615-unit increase in loyalty, suggesting that parental satisfaction is a key driver of sustained engagement with the policy.

The policy image demonstrates a systemic influence on satisfaction, operating through three indirect pathways—policy expectation ($\beta = 0.390$), perceived quality ($\beta = 0.196$), and perceived value ($\beta = 0.294$)—while also exerting a direct effect ($\beta = 0.232$). Within this transmission chain, perceived quality functions as a dual hub, converting inputs from policy expectation ($\beta = 0.193$) and policy image ($\beta = 0.196$) into perceived value ($\beta = 0.203$), while directly influencing satisfaction with the strongest effect ($\beta = 0.335$). This finding underscores that the quality of policy implementation serves as the critical converter linking objective performance with subjective evaluations. Notably, policy expectation not only affects satisfaction indirectly through perceived quality and perceived value but also exerts a weak direct effect ($\beta = 0.218$). The contribution of per-

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ceived value to satisfaction is relatively modest (β = 0.204), suggesting room for improvement in the efficiency of policy value communication. The model further indicates that enhancing loyalty requires prioritizing a three-dimensional intervention framework consisting of: policy image construction, implementation quality control, and perceived value enhancement. In addition, policymakers should dynamically monitor satisfaction thresholds (e.g., sensitivity zones where β > 0.6) to promptly adjust policy gaps. Meanwhile, the high-elasticity path from perceived quality to satisfaction (β = 0.335) suggests the need to design quality signal visualization tools that strengthen the traceability and transparency of policy performance in the public's perception.

In conclusion, the hypotheses related to after-school service satisfaction (H1–H11) are all supported. Considering the significance of each path coefficient, the final parental satisfaction model for after-school services was successfully established.

4. Conclusion and Recommendations

4.1 Conclusion

The findings of this study demonstrate that the structural equation model (SEM) exhibits clear advantages in analyzing the relationships among the six latent variables in the model, effectively addressing the limitations of traditional methods in handling inter-variable relationships. After appropriate model modification, the SEM achieved a satisfactory fit, providing a robust quantitative framework for exploring the factors influencing satisfaction with after-school services in China.

Based on the above model interpretation, the study concludes that among the latent variables influencing parental satisfaction, brand image, expected quality, perceived value, and perceived quality all exert direct positive effects on user satisfaction. Specifically, brand image indirectly affects perceived quality through its direct influence on expected quality, and further influences perceived value through both variables. In addition, brand image also has a direct effect on perceived quality, while perceived quality significantly and directly impacts perceived value. Thus, brand image and perceived quality are the two most influential determinants of parental satisfaction with after-school services.

4.2 Recommendations

(1) Establish a Dynamic Monitoring and Feedback Mechanism

Empirical results indicate that parental satisfaction has a strong driving effect on policy loyalty. However, the effectiveness of the contribution paths from policy image and perceived quality shows signs of attenuation. To address this issue, a three-tier "core–sensitive–warning" monitoring framework is recommended. Core indicators should focus on outcome variables such as satisfaction and loyalty, with dynamic thresholds established for real-time evaluation. Sensitive indicators, targeting high-elasticity variables such as policy image and perceived quality, can be monitored through data collected in real time via government service apps. This would shorten the feedback cycle to a monthly interval and enable automated "participation-as-feedback" data collection through embedded evaluation modules.

When regional mean values fall below the set threshold, cross-departmental policy adjustment procedures

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should be activated, prioritizing the correction of resource allocation imbalances.

Furthermore, a graded response mechanism should be implemented. For example, when satisfaction at an individual school drops by more than 10% month-on-month, a school-level corrective procedure should be triggered. If the citywide satisfaction rate declines by over 5%, a cross-departmental joint meeting mechanism should be initiated. The outcomes of these rectification efforts should be incorporated into the annual performance evaluation system of schools to ensure the effectiveness of the governance cycle.

In addition, policy implementation can be strengthened through parent-school consultation mechanisms led by parent committees, thereby reducing complaint rates and enhancing public participation in educational governance. To further improve governance efficiency, it is recommended to introduce third-party evaluation mechanisms by commissioning professional universities to conduct annual performance audits. These audits should focus on fund utilization compliance and equity in urban–rural resource allocation, with results linked to fiscal appropriations to form an incentive–constraint mechanism. By establishing a multi-actor collaborative governance framework of "monitoring–diagnosis–intervention–reassessment," education management can shift from experience-based decision-making to data-driven governance, ultimately achieving continuous improvement in both service quality and educational equity.

(2) Optimize the Supply of After-School Service Policies

Current mechanisms for conveying after-school service quality remain insufficiently transparent, leaving parents with limited and ambiguous information. This lack of transparency undermines public trust. To address this issue, two approaches are proposed:

Establish a Service Quality White Paper System

The "white paper" mechanism is key to rebuilding the credibility of quality signals. The government should issue an Annual Report on After-School Service Quality, using quantitative indicators to present service quality performance clearly. By linking evaluation results to school performance assessments, a virtuous cycle of quality assurance and incentive enhancement can be achieved.

Develop a Full-Process Traceability Platform

By building an integrated after-school service management information system, parents could access course syllabi, teacher qualifications, and activity videos simply by scanning a QR code. This real-time traceability mechanism would enhance parental engagement while providing schools with actionable insights for service improvement. The design of such a platform should balance data security and user experience, ensuring ease of access while reinforcing a feedback-based improvement cycle. Through this bidirectional interaction, parents' perceived quality can more effectively translate into actual service quality enhancement.

(3) Enhance Parental Perception of Service Quality

Schools and local governments can jointly produce a series of short promotional videos showcasing how after-school service policies address the "3:30 problem" (the gap between school dismissal and parents' work hours) and improve family life quality. These media efforts can enhance the public image of the government, strengthen policy communication, and increase parental satisfaction.

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Promoting narratives of equity is also a vital aspect of constructing a multidimensional communication framework. Short films that highlight examples of fiscal subsidies favoring under-resourced schools—such as how per-student funding is equalized across schools—help families understand the government's efforts to balance educational resources. Such multidimensional storytelling not only increases the appeal of the policy but also fosters public recognition of policy value, thereby laying a strong foundation for effective policy implementation.

This study further proposes two practical applications: the After-School Service Effect Visualization Project and the Social Synergy Network. The visualization project could present dynamic data—such as reductions in household tutoring expenses—through "After-School Service+" displays within schools, allowing parents to directly perceive the economic benefits of the policy and reinforcing their identification with it. The social synergy network could connect schools with museums, science centers, and other community institutions to create a "Second Classroom." Students could use after-school service cards for free access, thereby enriching extracurricular experiences and enhancing the collaborative social effects of the policy. These measures would not only increase the visibility and tangibility of after-school services but also promote their long-term sustainability and public acceptance.

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