

Public Service Satisfaction of Huilongguan Sports and Cultural Park Based on the Importance–Performance Analysis (IPA) Method

ZHANG Xinti, CHEN Xi*, HAN Juejia

(School of Sports Leisure and Tourism, Beijing Sport University, Beijing 100084, China)

Abstract With Beijing Huilongguan Sports and Cultural Park as the research object, this study was conducted to investigate public service satisfaction in the park by the Importance-Performance Analysis (IPA) method. A questionnaire covering six dimensions, including public transportation, sanitation and environment, and supporting facility construction, was designed. A total of 208 valid samples were collected, and SPSS was employed for reliability and validity tests as well as IPA analysis. The findings were as follows: ① Visitors were generally quite satisfied with the overall public services in Huilongguan Sports and Cultural Park. ② The highest satisfaction levels were observed in sanitation and environment services and the sports and cultural atmosphere, while lower satisfaction was noted for supporting facility construction and public information services. ③ The advantage enhancement zone includes sanitation and environment services and sports and cultural atmosphere; and the continuous maintenance zone includes public transportation services and security management and maintenance; the subsequent opportunity zone includes supporting facility construction and public information services; and there are no dimensions in the urgent improvement zone. The study recommends strengthening the service connotations from three aspects: enhancing facilities with sports as the core, optimizing services with a people-centered approach, and upgrading the information platform through technological efficiency. Additionally, a multi-stakeholder collaborative mechanism involving the government in coordinating policy resources, the operator in improving implementation efficiency, and the public participating in supervision and evaluation is proposed to drive the enhancement of public service quality at Huilongguan Sports and Cultural Park.

Keywords Importance-Performance Analysis (IPA) method, Sports park, Public service, Satisfaction

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In recent years, China has accelerated the pace of building a leading sports nation, striving to establish a new sports development framework by 2035 that features strong government leadership, standardized and orderly societal participation, a vibrant market, active public engagement, healthy development of social organizations, well-rounded public services, and alignment with the goal of basically achieving modernization^[1]. Among these, sports parks serve as one of the key platforms for national fitness and an important pillar of the strategy to build a leading sports nation. According to *Guidelines on Promoting the Construction of Sports Parks* issued by the National Development and Reform Commission, a sports park is defined as a green public space where sports and fitness are integral elements, harmoniously integrated with the natural ecology. Sports parks serve multiple functions, including ecological improvement, environmental beautification, physical exercise, sports recreation, leisure and relaxation, as well as disaster prevention and emergency shelter, making it an organic component of the green space system. Promoting the construction of sports parks is of great significance in meeting the growing

fitness needs of the public, improving quality of life, and advancing the development of a leading sports nation. To facilitate the establishment of sports parks, local governments have introduced a series of policy documents aimed at encouraging their construction, standardizing their operations, and ensuring their sustainable development.

Meanwhile, with the rapid development of socio-economic conditions, people have raised higher expectations for the quality of public services. In the context of sports parks, there is a growing demand for convenient, comfortable, safe, and smart sports environments, which include not only hardware facilities such as infrastructure and sports equipment, but also soft services like staff professionalism and a vibrant sports atmosphere. High-quality public services are crucial for enhancing people's satisfaction with sports parks, encouraging regular visits for exercise, and ultimately meeting the growing demand for fitness activities. Therefore, taking Beijing's Huilongguan Sports and Cultural Park as a case study, this study explored public service satisfaction in the sports park, aiming to understand genuine public needs, identify existing shortcomings and deficiencies,

and propose targeted improvement measures to effectively enhance participants' satisfaction.

1 Literature review

1.1 Research on sports parks

In *Standard for Classification of Urban Green Space* (CJJ/T 85–2002) issued in 2002, China classified sports parks as other special parks for the first time, and stipulated that their green coverage must be $\geq 65\%$. Subsequently, various regions introduced classification and planning standards for sports parks. For example, *Beijing Sports Facilities Special Plan (2018–2035)* defines sports parks as independently located parks primarily featuring outdoor sports venues, which can be further classified into large, medium, and small sports parks based on area. A review of extensive literature reveals that many scholars have conducted academic explorations on the construction and development of sports parks, primarily focusing on aspects such as planning and design, landscape layout, functional value and significance, development prospects and current situation analysis, as well as optimization strategies. However, research on public service satisfaction in sports parks remains relatively scarce.

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* Corresponding author.

1.2 Public satisfaction with sports services

Public services emphasize both the service-oriented role of the government and the rights of citizens. They include strengthening the construction of urban and rural public facilities, developing public services in education, science and technology, culture, health, and sports, as well as providing safeguards for public participation in socio-economic, political, and cultural activities^[2]. The public services in sports parks are a concrete manifestation and extension of public services in the field of sports parks, forming an integral part of public services. Sports public services encompass the provision of sports-related public goods and services, including the construction of sports public facilities, the development of sports public initiatives, and the dissemination of sports-related public information. These efforts aim to enrich the lives of the general public and create social safeguards and conditions for participation in sports activities.

Since the 1980s, the hot topic of “customer satisfaction” in marketing research was introduced by scholars into the study of public services, leading to extensive research on “public service satisfaction”. For example, scholars such as Verhagen found that the gap between residents’ expectations of public services provided in their locality and the actual level of service delivery is an effective way to measure satisfaction. When expectations exceed actual performance, public service satisfaction is low, and vice versa^[3]. Dutch scholars proposed the “service ecosystem theory”, suggesting that satisfaction is influenced by the efficiency of resource integration among governments, businesses, and social organizations^[4]. Alberto Nuviala et al.^[5] collected data from 2 027 users through questionnaires to evaluate the perceived quality, service satisfaction, and perceived value of professional sports services in Spain’s public and private sectors. They developed a model to predict satisfaction levels and perceived value, finding that Spanish customers had a favorable perception of the service quality provided by public sports institutions, particularly excelling in technical and personal service quality. However, deficiencies were identified in the provision of sports-related public service information. Both service satisfaction and perceived value largely depended on the activity itself, an uncontrollable factor. Generally speaking, international academic research on public service satisfaction has formed an interdisciplinary research matrix. Studies on satisfaction with public services in sports parks primarily focus on dimensions such as facility

provision, service experience, equity, and social benefits, demonstrating a multidisciplinary and empirically-driven approach.

Currently, research on public service satisfaction in sports parks remains relatively limited in China. Chen^[6] examined six dimensions of public sports services in Chengdu’s sports parks: sports facility services, sports organization services, sports instruction services, sports information services, sports events, and policies and regulations. The study proposed more detailed strategies to enhance public sports service satisfaction in Chengdu’s sports parks by conducting IPA analysis on the evaluation results of secondary indicators and combining them with field surveys. Liu et al.^[7] conducted a satisfaction survey on the public services of large-scale sports venues at Hongshan Sports Center in Hubei Province. The study analyzed and explored the main factors influencing satisfaction with the sports center based on three aspects: infrastructure, service quality, and overall evaluation. Wang^[8] found that customers expressed relatively high satisfaction with staff service experience, core service experience, and environmental experience within sports parks. However, satisfaction levels were lower regarding peripheral service experience, surrounding environment, and transportation convenience. The study recommends optimizing services by expanding parks’ influence, improving facility scale, and enhancing the quality of the surrounding environment.

Through systematic review and analysis of commonly used academic research methods, it has been found that investigations into public services in sports parks or sports venues primarily rely on designing public service satisfaction questionnaires. These studies explored service quality in multiple dimensions to assess the level of public services provided. Based on relevant research and public service theories, this study summarized six dimensions of public service satisfaction in Huilongguan Sports and Cultural Park: public transportation services, sanitation and environment services, supporting facility construction, security management and maintenance, public information services, and sports and cultural atmosphere.

2 Research design

2.1 Questionnaire design

The survey questionnaire was divided into three main sections. The first part was the sample population statistics. The second part covered respondents’ daily participation and preference tendencies regarding parks, mainly including

travel time, activity duration, visit frequency, recommendation attitude, and the public service content they care about most. The third part was the main body of the questionnaire, which investigated visitors’ satisfaction and level of importance toward public services in Beijing Huilongguan Sports and Cultural Park from six aspects: public transportation services, sanitation and environment services, supporting facility construction, security management and maintenance, public information services, and sports and cultural atmosphere. Based on the Likert scale method, respondents’ perceived importance or satisfaction levels for each factor were categorized into five indicators: very important/very satisfied, important/satisfied, unclear/general, unimportant/dissatisfied, and very unimportant/very dissatisfied, assigned corresponding values of 5, 4, 3, 2, and 1 respectively^[9].

2.2 Data collection

Taking the satisfaction of public services in Beijing Huilongguan Sports and Cultural Park as the research object, field surveys were conducted among Beijing residents and sports enthusiasts, with questionnaires were distributed, completed, and collected on-site. A total of 208 valid questionnaires were obtained. Descriptive statistics are presented in Table 1.

3 Data analysis and results

3.1 Reliability and validity tests

To ensure the scientific reliability of the questionnaire, SPSS 27.0 was employed to conduct a reliability test before the survey. The calculated Cronbach’s alpha coefficient (Table 2) indicated that the questionnaire exhibited high reliability. In basic research, a reliability of at least 0.80 is considered acceptable, while in exploratory research, a reliability of 0.70 is acceptable. Values between 0.70 and 0.98 are considered high reliability, and those below 0.35 indicate low reliability, which must be rejected^[10]. Additionally, combined with Bartlett’s test, a *P* value less than 0.05 indicates good validity.

3.2 IPA analysis of public service satisfaction in Huilongguan sports park

The IPA method, or Importance-Performance Analysis (IPA), evaluates users’ perceived importance of a product or service and their actual experience (performance), generating a two-dimensional chart divided into four quadrants^[11]. To ensure observation accuracy, the minimum data value is typically used as the starting point for the coordinates. Using IPA analysis and SPSS 27.0, the importance-satisfaction levels of public services in Huilongguan

Sports and Cultural Park were calculated for residents and sports enthusiasts, yielding the following results.

3.2.1 IPA analysis of overall dimensions. Respondents' expectations versus their actual perceptions of the public services in Huilongguan Sports and Cultural Park were two critical dimensions for evaluating the satisfaction of citizens and sports enthusiasts with the public services in the park. Through a paired-sample *T*-test conducted using SPSS, the *P* (sig) values indicated that

there were certain discrepancies between the “importance-satisfaction” levels of the public services in Huilongguan Sports and Cultural Park among citizens and sports enthusiasts. Among the indicators, three indicators, A, D, and E, showed relatively low significant differences, while remaining indicators, B, C, and F, exhibited *P* (sig) values lower than 0.05. Additionally, for most dimensions, the expectation indicators were higher than the actual perception.

After designing the survey questionnaire

based on the six influencing dimensions and collecting and analyzing respondents' evaluation data on the importance and satisfaction of various public service dimensions, the mean values of “importance-satisfaction” were obtained (Table 3). In terms of the six overall dimensions, importance (I) was higher than satisfaction (P). Additionally, for four of the overall dimensions, “B” (1), “C” (6), “D” (3), and “E” (5), the rankings of importance and satisfaction were the same. Among them, dimension “B” had

Table 1 Demographic characteristics (N=208)

Question	Option	Frequency	Percentage %	Effective percentage//%	Cumulative percentage//%/%
Your gender	Male	117	56.3	56.3	56.3
	Female	91	43.8	43.8	100
Your age	Under 18 years old	63	30.3	30.3	30.3
	19–29 years old	45	21.6	21.6	51.9
	30–39 years old	65	31.3	31.3	83.2
	40–49 years old	21	10.1	10.1	93.3
	50–59 years old	12	5.8	5.8	99
	60 years old and above	2	1	1	100
Your educational background	Senior high school or below (including technical secondary school)	78	37.5	37.5	37.5
	Associate degree	19	9.1	9.1	46.6
	Bachelor's degree	81	38.9	38.9	85.6
	Master's degree or higher	30	14.4	14.4	100
Your current occupation	Student (including undergraduates, middle school students, primary school students, and postgraduates)	70	33.7	33.8	33.8
	Staff of public institutions in science, education, culture, health, sports, etc.	13	6.3	6.3	40.1
	Personnel of party and government organs	1	0.5	0.5	40.6
	Enterprise employees	62	29.8	30	70.5
	Self-employed individuals	4	1.9	1.9	72.5
	Freelancers	24	11.5	11.6	84.1
	Retirees (including retired and resigned)	6	2.9	2.9	87
	Others	28	13.5	13.5	100
Your monthly disposable income	Less than 3 000 yuan	74	35.6	35.6	35.6
	3 001–5 000 yuan	15	7.2	7.2	42.8
	5 001–8 000 yuan	33	15.9	15.9	58.7
	8 001–10 000 yuan	13	6.3	6.3	64.9
	10 001–15 000 yuan	29	13.9	13.9	78.8
	15 001–25 000 yuan	28	13.5	13.5	92.3
	Over 25 000 yuan	16	7.7	7.7	100
You come from	Communities near Huilongguan Sports and Cultural Park	172	82.7	82.7	82.7
	Other districts in Beijing	30	14.4	14.4	97.1
	Other places	6	2.9	2.9	100
How long does it usually take to travel to Huilongguan Sports and Cultural Park?	Within 0.5 h	123	59.1	59.1	59.1
	0.5–1 h	57	27.4	27.4	86.5
	1–3 h	21	10.1	10.1	96.6
	More than 3 h	7	3.4	3.4	100
How long do you usually spend on activities in Huilongguan Sports and Cultural Park each time?	Within 1 h	30	14.4	14.4	14.4
	1–3 h	74	35.6	35.6	50
	More than 3 h	38	18.3	18.3	68.3
	Irregular hours	66	31.8	31.8	100
How often do you visit Huilongguan Sports and Cultural Park every week?	Rarely	51	24.5	24.5	24.5
	Once a week	78	37.5	37.5	62
	2–3 times a week	49	23.6	23.6	85.6
	4–5 times a week	10	4.8	4.8	90.4
	Almost every day	20	9.6	9.6	100
Would you be willing to recommend Huilongguan Sports and Cultural Park to people around you?	Willing to	208	100	100	100
	Unwilling to	0	0	0	100

the highest importance (I) and the largest mean difference between importance and satisfaction. The satisfaction levels for “E” (5) and “C” (6) were relatively low. It indicates that respondents place particularly high importance on sanitation and environment services among public services, while there is significant room for improvement in public information services and supporting facility construction.

Using the mean values of respondents’ “importance” for the six overall dimensions as the horizontal axis and the mean values of their perceived “satisfaction” as the vertical axis, an IPA quadrant analysis chart (Fig.1) was constructed based on the aforementioned public service expectation and satisfaction analysis data.

(1) Quadrant I: It stands for the advantage enhancement zone. Both dimensions “B” and “F” fall within this quadrant, indicating that these two indicators have relatively high levels of both “satisfaction” and “importance”. It suggests that respondents place particular emphasis on the sanitation and environment and sports and cultural atmosphere of Huilongguan Sports and Cultural Park, and the park itself also prioritizes these dimensions.

(2) Quadrant II: It represents the continuous maintenance zone. Dimensions “A” and “D” are located in this quadrant, indicating that the “satisfaction” levels for these two indicators exceed their “importance”. In the future, Huilongguan Sports and Cultural Park could consider highlighting public service measures in public transportation and security management as distinctive features to reinforce and enhance positive perceptions among visitors in these service areas.

(3) Quadrant III: It is the subsequent opportunity zone. Dimensions “C” and “E” fall within this quadrant, indicating that both “satisfaction” and “importance” for these two indicators are

relatively low. It reflects insufficient attention and inadequate development in supporting facility construction and public information services, failing to meet the growing needs of residents for a better life and visitors’ basic fitness and health requirements.

(4) Quadrant IV: It represents the urgent improvement zone. No public service dimensions of Huilongguan Sports and Cultural Park currently fall within this quadrant, indicating overall strong performance and alignment with high-quality park construction standards.

3.2.2 IPA analysis of evaluation factors. According to the questionnaire survey statistics, the “importance-satisfaction” analysis of evaluation factors under each overall dimension is shown in Table 4. In terms of importance, over 68% of the total evaluation factors had mean scores exceeding 4 points. For satisfaction, over 48% of the total evaluation factors achieved mean scores above 4 points. The evaluation factors ranked 2nd, 3rd and 4th all belonged to dimension “B”, indicating that Huilongguan Sports and Cultural Park generally performs well, with a relatively comprehensive public service system that meets visitors’ basic needs. However, to further enhance visitor satisfaction more effectively, the park needs to implement more targeted and specific measures.

As shown in Table 4, the “satisfaction” for three evaluation factors, “A1”, “F1”, and “F3”, exceeded their “importance”, indicating that these factors sufficiently meet visitors’ current needs. However, there were three evaluation factors exhibiting “P-I” values below -0.3, with the lowest reaching -0.442. They ranked as “C3”, “F7”, and “F6” in descending order, indicating that visitors’ “satisfaction” levels of these three evaluation factors were significantly lower than the perceived “importance”. It suggests that respondents’ actual experience with certain specific

public services in Huilongguan Sports and Cultural Park falls short of expectations.

Fig.2 clearly and intuitively displays the distribution of each evaluation factor in the IPA quadrant analysis chart. The first quadrant is the advantage enhancement zone. The evaluation factors located in this quadrant included “Do you think parking in the park is convenient?”, four evaluation factors belonging to the hygiene and environmental service dimension, namely: “Do you think the park is clean and tidy?”, “Do you think the indoor ventilation of the venues is well-maintained?”, “Do you think the green environment of the park is comfortable and aesthetically pleasing?”, and “Do you think the park has sufficient and clean restrooms?”, three evaluation factors belonging to the security management and maintenance dimension, namely: “Do you think the service attitude of the staff in the consulting service center is good?”, “Do you think the park’s safety and rescue services are adequate?”, and “Do you think the park’s management and maintenance are orderly and standardized?”, as well as four evaluation factors belonging to the sports and cultural atmosphere dimension, namely “How do you rate the sports atmosphere in the park?”, “Do you think the park has sufficient quantity of various sports facilities?”, “Do you consider the types of sports programs offered in the park to be diverse?”, and “How do you evaluate the quality of facilities and safety of sports venues in the park?”. It indicates that these dimensions have advantages, and Huilongguan Sports and Cultural Park has placed particular emphasis on public health environment services, management and security maintenance, as well as sports and cultural atmosphere in recent years. The park has gained recognition from citizens and sports enthusiasts by strictly controlling environmental quality, strengthening management efforts, and enhancing the sports atmosphere.

The second quadrant is the continuous maintenance zone. It includes five indicators: “Do you think the transportation to Huilongguan Sports Park is convenient?”, “Do you think the road signs in the park and venues are

Table 2 Reliability analysis

Indicator	Cronbach’s alpha	Number of terms
Overall satisfaction-importance	0.961	58
Satisfaction	0.952	29
Importance	0.941	29

Table 3 IPA analysis of overall dimensions

Dimension	Satisfaction (P)		Importance (I)		Mean difference (P-I)	T value	P value
	Mean	Ranking	Mean	Ranking			
A Public transportation services	4.054	2	4.056	4	0.00	-0.030	0.976
B Sanitation and environment services	4.186	1	4.346	1	-0.16	-3.290	0.001
C Supporting facility construction	3.788	6	3.906	6	-0.12	-2.356	0.019
D Security management and maintenance	3.997	3	4.063	3	-0.07	-1.344	0.180
E Public information services	3.807	5	3.933	5	-0.13	-1.885	0.061
F Sports and cultural atmosphere	3.993	4	4.142	2	-0.15	-2.957	0.003

clear?”, “Do you think the design of the park and venues is child-friendly?”, “Do you consider the coaches (social sports instructors) for various sports programs to be professional?”, and “Do you feel the sports-themed activities organized by the park for residents are diverse?”. There are relatively few factors located in this zone, but these five indicators span different dimensions, and visitors have relatively low expectations and are quite satisfied with them, so maintaining the current status is sufficient.

The third quadrant is the subsequent opportunity zone. It includes four evaluation factors related to supporting facilities, namely: “Do you think the WiFi coverage in the venues is efficient?”, “Do you think there are sufficient charging stations and power outlets in the

park?”, “Are the lockers and shower rooms in the venues adequate?”, and “Do you think the facilities can meet the needs of people with disabilities?”, three evaluation factors in the public information service dimension, namely: “Do you think the park’s complaint feedback channels are efficient?”, “Do you think the release and update of the park information is timely?”, and “Do you think there are many channels for park information release?”, and the question: “Do you feel the park provides residents with sports communication platforms (forums, message boards, WeChat groups, etc.)?”. This zone has the highest concentration of evaluation factors in the dimensions of supporting facility construction and public information services, indicating that the current

supporting infrastructure system in Huilongguan Sports and Cultural Park is incomplete. Additionally, the insufficient publicity and dissemination of information have resulted in widespread gaps in visitors’ information reception channels, as well as a lack of two-way communication mechanisms.

Finally, the fourth quadrant is the urgent improvement zone. This zone includes four evaluation factors with high perceived importance but low satisfaction, namely: “Do you think the number of chairs, tables, and lockers in the rest area is adequate?”, “Do you find the online booking system for the park and venues convenient?”, “Are there enough free public recreational sports facilities in the park?”, and “Do you think the free access hours for recreational sports facilities are sufficient?”. There are two evaluation factors in the dimension of sports and cultural atmosphere. With economic development, people’s health awareness and demands have grown stronger, making visits to sports parks for exercise a daily lifestyle. However, surveys reveal that Huilongguan Sports and Cultural Park has many paid facilities and a severe lack of free public recreational sports amenities, leading to lower perceived expectations among visitors. These are also the two most urgently needed improvements in this zone, as indicated by the distribution on the chart.

As can be seen, the 29 evaluation factors are distributed in the four quadrants in a relatively regular pattern. The first and third quadrants include a comparatively larger number of factors, while the second and fourth quadrants have slightly fewer. The advantage and expansion zones are prominent, whereas the improvement and maintenance zones are less represented.

4 Research findings and recommendations

4.1 Conclusions

Visitors are generally satisfied with the public services of Huilongguan Sports and Cultural Park, particularly in terms of sanitation and environment services and the sports and cultural atmosphere. As a large-scale sports park integrating sports, leisure, and entertainment, Huilongguan Sports and Cultural Park in Beijing adheres to the general service standards and construction requirements for parks. It places significant emphasis on the public service development of sanitation and environment, making sanitation and environment services a standout feature of its public services. As a sports-themed park, its sports and cultural

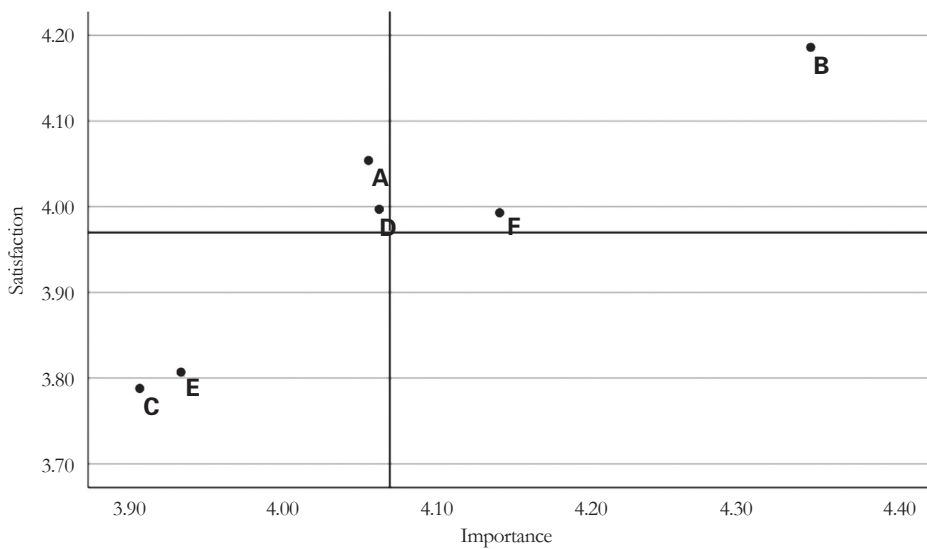


Fig.1 IPA analysis of overall dimensions

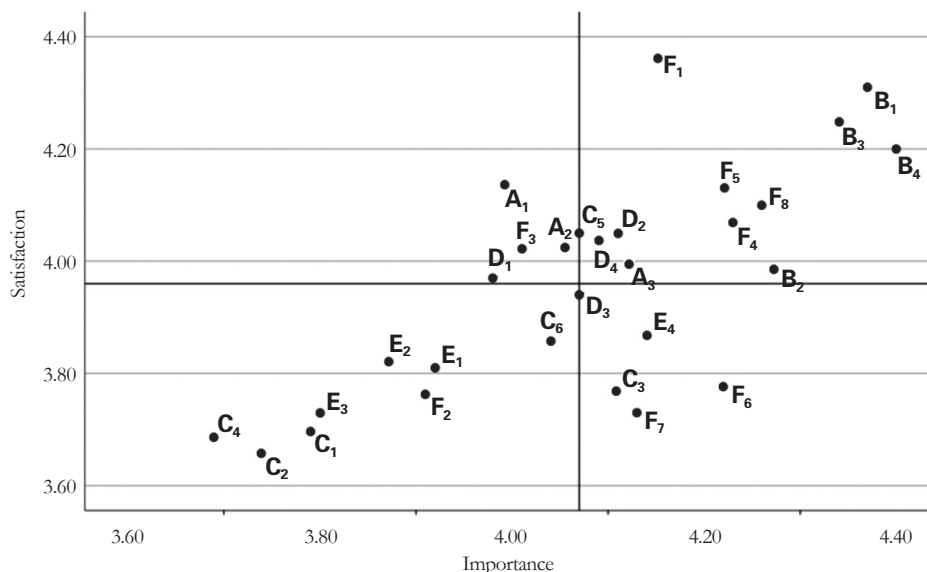


Fig.2 IPA analysis of evaluation factors (questions)

atmosphere serves as the core foundation. To encourage and attract more residents and sports enthusiasts to participate in recreational fitness activities, Huilongguan Sports Park emphasizes the diversity of sports programs and the completeness of venue facilities.

Visitors expressed the lowest satisfaction with the supporting facilities and public information services in Huilongguan Sports and Cultural Park. According to the data analysis of public service satisfaction questionnaire of Huilongguan Sports and Cultural Park, among the six dimensions evaluated, issues in supporting facility construction include poorly planned rest areas and charging zones, as well as a lack of barrier-free and child-friendly designs. These shortcomings fail to meet the growing and diverse needs of the public. There remains significant room for improvement in public information services. Both offline channels such as community and park bulletin boards, and online platforms including social media and official websites should provide more frequent and timely updates about park information and

event announcements. This would enhance the park's visibility and help establish sports communication platforms (such as forums, discussion boards, and WeChat groups) for visitors, thereby strengthening communication channels among sports enthusiasts.

4.2 Recommendations

4.2.1 Recommendations from the perspective of themes. With sports as the core focus, efforts should be made to improve and strengthen the facility construction of the sports park to enhance the quality of public services. The park can maintain clean and hygienic facilities by upgrading the sports and leisure facilities as well as supporting service infrastructure at Huilongguan Sports and Cultural Park, optimizing the layout of sports zones, ensuring smooth pedestrian and vehicle flow, and establishing routine cleaning and maintenance mechanisms. These measures will boost the enthusiasm and sense of belonging among residents and sports enthusiasts while improving the park's public service capacity and quality. Additionally, Huilongguan Sports and Cultural

Park should implement differentiated pricing for sports venues based on time slots and resident status to better meet the growing public demand for services.

The development should adopt a people-centered approach to address the population's increasing fundamental fitness and health needs while stimulating enthusiasm for physical exercise. Given the objective differences among various age groups including children, adolescents, adults, and the elderly, as well as between persons with disabilities and able-bodied individuals, diverse public service requirements naturally emerge. To address these differentiated public service demands, it is necessary to conduct large-scale and effective surveys to develop personalized service plans. For socially vulnerable residents, we should establish specialized organization and management departments to serve disadvantaged groups, and set up dedicated sports service channels. For the elderly and children, free or low-cost policies can be implemented, and service prices can be regulated to meet people's fitness needs.

Table 4 IPA analysis of evaluation factors

Question	Satisfaction (P)		Importance (I)		Mean difference (P-I)	T value	P value
	Mean	Ranking	Mean	Ranking			
A ₁ Do you think the transportation to Huilongguan Sports Park is convenient?	4.14	5	3.99	21	0.154	2.128	0.035
A ₂ Do you think the road signs in the park and venues are clear?	4.02	13	4.06	18	-0.038	-0.571	0.569
A ₃ Do you think parking in the park is convenient?	4.00	14	4.12	12	-0.120	-1.571	0.118
B ₁ Do you think the park is clean and tidy?	4.31	2	4.37	2	-0.058	-1.037	0.301
B ₂ Do you think the indoor ventilation of the venues is well-maintained?	3.99	15	4.27	4	-0.284	-4.059	0
B ₃ Do you think the green environment of the park is comfortable and aesthetically pleasing?	4.25	3	4.34	3	-0.096	-1.504	0.134
B ₄ Do you think the park has sufficient and clean restrooms?	4.20	4	4.40	1	-0.202	-3.338	0.001
C ₁ Do you think the WiFi coverage in the venues is efficient?	3.70	27	3.79	27	-0.091	-1.134	0.258
C ₂ Do you think there are sufficient charging stations and power outlets in the park?	03.66	29	3.74	28	-0.077	-0.977	0.330
C ₃ Do you think the number of chairs, tables, and lockers in the rest area is adequate?	3.77	24	4.11	13	-0.337	-4.503	0
C ₄ Are the lockers and shower rooms in the venues adequate?	3.69	28	3.69	29	0	0	1.000
C ₅ Do you think the design of the park and venues is child-friendly?	4.05	10	4.07	16	-0.019	-0.270	0.787
C ₆ Do you think the facilities can meet the needs of people with disabilities?	3.86	19	4.04	19	-0.187	-2.443	0.015
D ₁ Do you consider the coaches (social sports instructors) for various sports programs to be professional?	3.97	16	3.98	22	-0.005	-0.079	0.937
D ₂ Do you think the service attitude of the staff in the consulting service center is good?	4.05	9	4.11	14	-0.063	-1.095	0.275
D ₃ Do you think the park's safety and rescue services are adequate?	3.94	17	4.07	17	-0.130	-1.999	0.047
D ₄ Do you think the park's management and maintenance are orderly and standardized?	4.04	11	4.09	15	-0.053	-0.872	0.384
E ₁ Do you think the park's complaint feedback channels are efficient?	3.81	21	3.92	23	-0.111	-1.605	0.110
E ₂ Do you think the release and update of the park information is timely?	3.82	20	3.87	25	-0.048	-0.696	0.487
E ₃ Do you think there are many channels for park information release?	3.73	26	3.80	26	-0.072	-0.943	0.347
E ₄ Do you find the online booking system for the park and venues convenient?	3.87	18	4.14	10	-0.274	-1.754	0.081
F ₁ How do you rate the sports atmosphere in the park?	4.36	1	4.15	9	0.212	3.284	0.001
F ₂ Do you feel the park provides residents with sports communication platforms (forums, message boards, WeChat groups, etc.)?	3.77	23	3.91	24	-0.139	-2.213	0.028
F ₃ Do you feel the sports-themed activities organized by the park for residents are diverse?	4.02	12	4.01	20	0.005	0.079	0.937
F ₄ Do you think the park has sufficient quantity of various sports facilities?	4.07	8	4.23	6	-0.159	-2.469	0.014
F ₅ Do you consider the types of sports programs offered in the park to be diverse?	4.13	6	4.22	7	-0.091	-1.408	0.161
F ₆ Are there enough free public recreational sports facilities in the park?	3.78	22	4.22	8	-0.442	-5.434	0
F ₇ Do you think the free access hours for recreational sports facilities are sufficient?	3.73	25	4.13	11	-0.409	-4.419	0
F ₈ How do you evaluate the quality of facilities and safety of sports venues in the park?	4.10	7	4.26	5	-0.163	-2.420	0.016

Enhancing efficiency through technology improves the public information service level of sports parks and promotes connectivity among residents. With the rapid development of information technology and increasing transportation convenience, digitalization has become a crucial trend in modern societal progress. Sports parks should establish and improve comprehensive digital network information exchange platforms (such as forums, message boards, microblogs, WeChat groups, etc.) to achieve rapid transmission and processing of multi-channel all-round information, breaking down information silos. This will enable residents to stay updated on real-time booking statuses of sports park facilities and various preferential policies, and connect with like-minded fitness partners to form sports associations, thereby enhancing the operational efficiency of park facilities. These efforts will provide visitors with a more convenient and enjoyable service experience.

4.2.2 Recommendations from the perspective of responsibility subjects. Government departments should focus on policy provision and resource coordination. They should strengthen macro-level guidance in planning, establish construction standards and service regulations for sports parks, and define mandatory requirements for spatial layout, facility allocation, and barrier-free design. Additionally, they should provide sufficient financial support through fiscal subsidies, special bonds, and other means to fund the construction and renovation of sports parks in low-income communities. The administrative departments should enhance supervision and evaluation by establishing a cross-departmental joint oversight mechanism. Regular assessments should be conducted on the service quality of operating agencies, with non-compliant units subject to warnings, rectification, or removal. Satisfaction with sports parks should be included in local government performance evaluations, and a “one-vote veto” policy should be implemented

for units failing to meet standards for two consecutive years.

Operating agencies should strengthen service implementation and user responsiveness. They should improve facility maintenance management systems, and formulate systems for daily inspections, periodic repairs, and emergency responses to ensure that facility integrity meets standards. They should enhance event planning satisfaction, and design themed activities such as parent-child sports, senior fitness programs, and youth competitions based on user demand research to increase engagement. Additionally, they should expand digital service applications by developing platforms for online bookings, complaint feedback, and satisfaction evaluations to ensure transparent and traceable service processes.

The public implements media oversight and social participation. A comprehensive media supervision platform should be established, integrating channels such as television, radio, and the internet. Columns like “Public Service Exposure Platform” and “Livelihood Hotline” can be set up to track public service issues in real time. The progress of addressing problems reported by the media can be publicly displayed on media platforms, while units with low satisfaction ratings can be exposed and held accountable. A public participation platform should be established to recruit community residents and volunteers as “public service observers” who would conduct regular inspections of sports parks and provide improvement suggestions. Social capital participation should be encouraged through various financing channels such as PPP models and naming rights to diversify funding sources.

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