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Public Perceptions of Equitable Access to Public Sports Venues: Influencing Factors and Improvement Strategies

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Abstract. Fair access to the public sports facility system should be ensured for all segments of society to improve the quality of public sports services. This paper studies factors related to public awareness of equitable access in China. Based on the multi-dimensional framework of opening hours, reservation systems, fee policies, venue resource allocation, opportunities for different groups and information disclosure, a 15-item questionnaire was distributed to the 36 people who have used the public sports venues. Descriptive Statistics, Reliability and Validity tests, Pearson Correlation Analysis and stepwise multiple linear regression were conducted on the data. Overall, the results show that the perception of equitable access was relatively positive (M = 4.019), but opportunities for different groups and allocation of venue resources received lower evaluations. All six factors were positively and significantly related to the general sense of fairness. Regression analysis only identified opportunities for different groups and fee policies; the model explained 68.9% of the variance in the perception of equitable access. Based on the above preliminary results, the construction of a sense of fairness for the public should be inclusive and low-cost. To improve the fairness of access to public sports services, more inclusive venue-opening policies, affordable-entry mechanisms and stronger support for disadvantaged groups need to be introduced. Given the small sample size, further research can be conducted on a larger scale with various other data to corroborate the results.

Keywords: Equitable Access, Public Sports Venues, Public Perception, Social Equity, Social Inclusion

1. Introduction

In line with the national fitness strategy and the Healthy China 2030 initiative, the distribution of public sports facilities fairly is now considered a measure of the quality of public sports services. Although China has built a good sports facility network, there are still problems with the opening-reservation system, fee transparency, resource allocation, etc. Gao and others have identified policy-related, management-related and service-related obstacles to public access of sports facilities, and indicated a gap between facility supply and effective public use [1].

Equitable access also refers to differences in the availability and accessibility of facilities in different areas and among various groups of people. Liu and others took Harbin as the case study to show the spatial differences in access to public sports facilities, and the central area of the city had

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better access than the outskirts [2]. Recently, Gong et al. have explored the spatial and social equity of sports facilities in Shanghai, noting that there are accessibility differences and disadvantages for vulnerable groups in less-developed areas [3].

Based on the above results, most of the previous studies have concentrated on institutional constraints and objective accessibility but have paid less attention to how the public perceives the fairness of venue-opening arrangements. The operating hours, convenience of reservation, openness of fees, allocation of resources, group inclusion and accessibility of information can all affect the residents' sense of fairness. Therefore, this study builds an all-around system to investigate the reasons for the sense of fair access to public sports facilities and their relative weights. It will extend research on perceived fairness and provide corresponding suggestions to improve venue-opening policies, service quality and the equalisation of public sports services.

2. Theoretical foundations and objectives

Fair Distribution of resources and reasonable access procedures constitute equitable access to public sports facilities. Procedural justice is the need for transparent and fair rules in the formation of people's sense of fairness [4]. Previous studies have pointed out that institutions and operations restrict the public use of sports facilities by setting up limited opening times and poor management [1, 5]. Therefore, in addition to the construction of facilities, the organization of public access should also be considered.

Most previous research has focused on the spatial accessibility and distribution of sports facilities. Research has shown that there are regional, facility-level and mode-of-transport inequalities [3, 6]. However, physical accessibility does not always mean perceived accessibility; the evaluation of residents may also be influenced by their own experiences and social conditions [7, 8]. Fair access will be granted in line with the objective and subjective circumstances.

Although there have been some developments, the relative importance of institutional design in influencing people's perception of fairness in accessing sports facilities has received less attention. Specifically, the connections among opening hours, reservation systems, fee policies, resource distribution, opportunities for various groups, and transparency of information need to be explored further. Given the above shortcomings, the current study builds a multi-dimensional system to investigate the connections among the six factors and determines which need to be addressed first in enhancing the accessibility of public sports services.

This paper will explore the public's perception of fairness in access to public sports facilities. It will quantify the public's awareness of the six areas, identify the main drivers for all-round attitudes towards inequality through correlation and multiple linear regression analysis, and put forward specific suggestions to strengthen the organisation of venue-opening events and promote equitable access to public sports facilities.

3. Research methods

This paper will use the above three methods for investigation. Relevant Chinese and English literature from databases such as CNKI and Web of Science was analysed to construct a theoretical system and identify six dimensions of perceived equitable access: opening hours, reservation system, fee policy, venue resource allocation, opportunities for different groups, and information transparency. A 15-item questionnaire has been developed using a five-point Likert scale and will be distributed online to members of the public who have used public sports venues. Use SPSS to analyse the collected data. Cronbach's alpha, KMO and Bartlett's tests are employed to examine the

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reliability and suitability for factor analysis of the scale. Descriptive statistics show the general trend and any problems in the data; Pearson correlation analysis and stepwise multiple linear regression are used to examine the relationship among the six dimensions and overall perception of equitable access. The results offer experimental support to identify the main reasons and develop corresponding improvement plans.

4. Results

4.1. Frequency statistical analysis of demographic variables

Table 1 reports the distribution of demographic characteristics of the valid sample in this survey, with a valid sample size of 36. In terms of gender, there are 9 males (25.00%) and 27 females (75.00%); the gender structure of the sample is female-dominated, and the male-to-female ratio is not balanced. In terms of age, there are 20 people aged 18–35 (55.56%), 15 aged 36–55 (41.67%), 1 under 18 (2.78%) and 0 aged 56 and above (0.00%); young and middle-aged people aged 18–55 account for 97.22% in total, forming the absolute core of the sample, while the elderly group aged 56 and above is entirely absent from this survey. In terms of educational attainment, 18 people hold a bachelor's degree (50.00%) and 12 hold a master's degree or above (33.33%), together accounting for 83.33%; 3 hold a junior college diploma (8.33%), 2 have a high school / technical secondary / vocational school education (5.56%), and 1 has a junior high school education or below (2.78%), indicating that the educational level of the sample is markedly high. In terms of frequency of visits to public sports venues, 20 visit once a month (55.56%), 9 visit 2–3 times a month (25.00%), 5 visit once a week (13.89%), 2 visit 2–3 times a week (5.56%), and 0 visit almost every day (0.00%); only 7 respondents are high-frequency users visiting at least once a week (19.45%), indicating that the sample consists mainly of low- to medium-frequency users, and that fixed user groups motivated by daily exercise have not been adequately covered. Venue type was a multiple-choice item: badminton / table tennis halls had the most users, with 20 respondents (55.56%); multi-purpose gymnasiums / stadiums and swimming pools tied for second place, with 11 each (30.56%); followed by gyms with 8 (22.22%), national fitness centers / community sports centers with 7 (19.44%), basketball / football fields with 5 (13.89%), and others with 2 (5.56%). Because multiple selections were allowed for this item, the percentages of the options sum to more than 100%, showing that venue use among respondents is clearly diversified and is dominated by indoor small-ball venues and multi-purpose venues. Overall, this sample consists mainly of young and middle-aged, highly educated, low- to medium-frequency users.

Table 1. Frequency statistical analysis of demographic variables

Variable	Option	Frequency	Percentage (%)
Gender	Male	9	25
	Female	27	75
Age	Under 18	1	2.78
	18–35	20	55.56
	36–55	15	41.67
	56 and above	0	0

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Table 1. (continued)

	Junior high school or below	1	2.78
	High school / technical secondary / vocational school	2	5.56
Education	Junior college	3	8.33
	Bachelor's degree	18	50
	Master's degree or above	12	33.33
	Once a month	20	55.56
	2–3 times a month	9	25
Visit frequency	Once a week	5	13.89
	2–3 times a week	2	5.56
	Almost every day	0	0
	Multi-purpose gymnasium / stadium	11	30.56
	Swimming pool	11	30.56
	Badminton / table tennis hall	20	55.56
Venue type	Basketball / football field	5	13.89
	National fitness center / community sports center	7	19.44
	Gym	8	22.22
	Other	2	5.56

4.2. Internal consistency reliability

According to the reliability test results for the perceived equitable access to public sports venues scale in Table 2, its Cronbach's alpha is 0.953, which meets the 0.7 standard. Therefore, the perceived equitable access to public sports venues scale has good internal consistency.

Table 2. Internal consistency reliability

Variable	Cronbach's Alpha	Items
Perceived equitable access scale	0.953	15

4.2.1. Construct validity

According to the validity test results for the perceived equitable access to public sports venues scale in Table 3, the KMO value is 0.853, which meets the 0.7 validity standard, and the chi-square statistic of Bartlett's test of sphericity reaches the 5% significance level. Therefore, the perceived equitable access to public sports venues scale has good construct validity.

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Table 3. Construct validity

Variable	KMO	Bartlett's Test of Sphericity		
		Chi-square	df	Significance
Perceived equitable access scale	0.853	491.367	105	0.000

4.3. Descriptive statistical analysis

Table 4 reports the descriptive statistics for perceived equitable access to public sports venues and each of its influencing dimensions. Overall, the means of the variables range from 3.625 to 4.069, all above the midpoint of 3 on the 5-point scale, indicating that the public holds moderately positive evaluations of equitable access to public sports venues and of each dimension. Among them, the mean of perceived equitable access to public sports venues is 4.019 (SD=0.816), indicating that the public's overall perception is relatively positive, though it has not yet reached a high level of endorsement.

By dimension, opening hours has the highest mean (M=4.069, SD=0.863), followed by information transparency (M=3.972, SD=0.801), indicating that the public relatively approves of the arrangements for opening periods and of information disclosure. The reservation system (M=3.778, SD=0.832) and fee rules (M=3.736, SD=0.797) are at a moderately positive level and still leave room for improvement. Venue resource allocation (M=3.667, SD=0.956) and opportunities for different groups (M=3.625, SD=0.959) have the lowest means and the largest standard deviations, reflecting that the public's evaluations of the fairness of resource allocation and of group inclusiveness are relatively low, and that perception differences across groups are quite pronounced, constituting the key shortcomings constraining equitable access to public sports venues.

Table 4. Descriptive statistical analysis of variables

Variable	Min	Max	Mean	SD
Perceived equitable access to public sports venues	2	5	4.019	0.816
Opening hours	2	5	4.069	0.863
Reservation system	2	5	3.778	0.832
Fee rules	2	5	3.736	0.797
Venue resource allocation	2	5	3.667	0.956
Opportunities for different groups	2	5	3.625	0.959
Information transparency	2	5	3.972	0.801

4.4. Correlation analysis

As shown in Table 5, perceived equitable access to public sports venues is significantly and positively correlated with all six dimensions, with correlation coefficients ranging from 0.591 to 0.788, all statistically significant at the 0.01 level. This indicates that the institutional arrangements reflected by the six dimensions—opening hours, reservation system, fee rules, venue resource allocation, opportunities for different groups and information transparency—are closely and positively related to the public's overall perception of equitable access. Ranked by correlation strength, opportunities for different groups (r=0.788) and venue resource allocation (r=0.771) are most highly correlated with overall perception, followed by the reservation system (r=0.714), while

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opening hours (r=0.640), fee rules (r=0.615) and information transparency (r=0.591) are relatively lower. This ordering indicates that the public's overall judgment of equitable access depends first on who resources are allocated to and how they are allocated, namely fairness of opportunity and fairness of outcome, and is relatively weakly associated with procedural arrangements such as opening hours and information release. This preliminarily confirms that the core of perceived equitable access lies in substantive fairness rather than formal fairness.

Table 5. Correlation analysis among variables

Variable	1	2	3	4	5	6	7
PEA	1						
OH	.640**	1					
RS	.714**	.659**	1				
FR	.615**	.567**	.620**	1			
VRA	.771**	.687**	.542**	.556**	1		
DGO	.788**	.559**	.680**	.493**	.787**	1	
IT	.591**	.736**	.666**	.525**	.659**	.674**	1

Note: PEA = perceived equitable access to public sports venues; OH = opening hours; RS = reservation system; FR = fee rules; VRA = venue resource allocation; DGO = opportunities for different groups; IT = information transparency. * $p<0.05$, ** $p<0.01$.

4.5. Regression analysis

Considering that some correlation may exist among the independent variables, including them all in the regression model would easily produce multicollinearity, leading to unstable regression coefficient estimates and biased significance judgments. Therefore, this study adopts the stepwise method for multiple linear regression, so as to screen out core variables with independent explanatory power for perceived equitable access to public sports venues while controlling for collinearity.

Table 6 reports the results of the multiple linear regression based on the stepwise method. The model is significant overall ($F=36.478$, $p<0.001$), with $R^2=0.689$ and adjusted $R^2=0.670$, indicating that the variables finally retained can jointly explain about 67.0% of the variance in public perceptions of equitable access, and that the model fits well. The independent variables that finally entered the model are "opportunities for different groups" and "fee rules". Among them, opportunities for different groups has a significant positive effect on perceived equitable access ($B=0.545$, $SE=0.095$, $\beta=0.640$, $t=5.733$, $p<0.001$); fee rules also has a significant positive effect ($B=0.307$, $SE=0.114$, $\beta=0.300$, $t=2.684$, $p=0.011$). That is, for every one-unit increase in opportunities for different groups, perceived equitable access increases by an average of 0.545 units; for every one-unit increase in fee rules, perceived equitable access increases by an average of 0.307 units. Comparing the standardized coefficients, the effect of opportunities for different groups is clearly greater than that of fee rules, making it the core variable explaining public perceptions of equitable access. The constant term is significant ($B=0.897$, $p=0.033$), but is usually not given substantive interpretation. The regression equation can be expressed as follows:

Perceived equitable access to public sports venues = 0.897 + 0.545 × Opportunities for different groups + 0.307 × Fee rules

After stepwise screening, the variables opening hours, reservation system, venue resource allocation and information transparency did not enter the final model, possibly because they were

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removed due to collinearity or insignificant incremental explanatory power. Overall, to improve the public's perception of equitable access to public sports venues, priority should be given to guaranteeing opportunities for different groups, while optimizing fee rules in parallel.

Table 6. Results of multiple linear regression analysis

Variable	Unstandardized Coefficients		Standardized Coefficient	t	p
	B	SE			
(Constant)	0.897	0.403		2.228	0.033
DGO	0.545	0.095	0.640	5.733	0.000
FR	0.307	0.114	0.300	2.684	0.011
R Square	0.689				
Adjusted R Square	0.670				
F	36.478				
p	0.000				

5. Discussion

According to the above results, public awareness of fair access to sports facilities is mainly driven by actual fairness rather than by formal procedures. Although the overall average score is relatively high (M = 4.019), the opportunities for different groups have received the lowest evaluations, and inclusive access is still lacking.

As shown in the correlation analysis, all six factors are positively correlated with the overall perception of fair access. Only the opportunities for different groups and fee policies are included in the stepwise regression model, and together they account for about 67.0% of the variance. Opportunities for various groups have the most explanatory power, followed by fee rules. Therefore, the residents need to ensure that different social groups have access to the facilities and that the corresponding costs are reasonable. Resource allocation is related to the people's general mood; therefore, adding other factors does not significantly improve the explanatory power. It may be due to resource overlap and different group access rights.

In light of this, the distribution of resources should consider the needs of all people, paying particular attention to the disadvantaged. They also believe that objective provision of facilities may not be perceived as fair. Improve the accessibility of venues for groups with different needs in practice, offer free or reduced-price periods, and have transparent fee policies. Diversify the reservation channels, provide timely information and fair allocation of peak-hour facilities to enhance the public's sense of fairness in access.

6. Conclusion

The six indicators of perceived equitable access to public sports facilities were studied. The results show that, in general, the perception is relatively positive; however, there are differences among the dimensions, and opportunities for some groups are relatively small. Although all six dimensions are positively correlated with the overall perception of equitable access, regression analysis shows that only group-specific access opportunities and fee rules remain in the final model, and together they account for about 67.0% of the variance.

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Consider the actual fairness of the public sports service in addition to the procedure during the assessment. Based on the above results, new inclusive opening policies and affordable-access systems can be introduced. The small size and non-probability sampling method of the online sample limit its representativeness, and as a cross-sectional study, it cannot determine causality among the results. In the future, many different kinds of samples will be collected to conduct a long-term study using various ways to examine how objectively accessible something is to being subjectively fair.

References

[1] Gao, W., Feng, W., Xu, Q., Lu, S., & Cao, K. (2022). Barriers associated with the public use of sports facilities in China: A qualitative study. *BMC Public Health, 22*, Article 2112.

[2] Liu, Y., Wang, H., Sun, C., & Wu, H. (2022). Equity measurement of public sports space in central urban areas based on residential scale data. *International Journal of Environmental Research and Public Health, 19*(5), Article 3104.

[3] Gong, Y., Fang, L., & Yao, S. (2025). Spatial and social equity evaluation of sports facilities in Shanghai: An accessibility-driven assessment. *Sustainable Cities and Society, 132*, Article 106791.

[4] Tyler, T. R. (2000). Social justice: Outcome and procedure. *International Journal of Psychology, 35*(2), 117–125.

[5] Xu, Y., Peng, J., Zhu, J., Chen, L., & Xu, Z. (2024). Influencing factors and implementation strategies of social opening of university sports venues. *Journal of Natural Science Education, 1*(3), 21–26.

[6] Wang, W., Cai, Y., Xiong, X., & Xu, G. (2025). Evaluating accessibility and equity of multi-level urban public sports facilities at the residential neighborhood scale. *Buildings, 15*(10), Article 1640.

[7] Wang, J.-B., Feng, L.-Y., Guo, L., Liu, B.-Y., & Hong, X.-C. (2024). Understanding the difference between spatial accessibility and perceived accessibility of public service facilities in coastal towns and villages. *Sustainability, 16*(24), Article 10908.

[8] Godwyll, J. M., Buzinde, C. N., Glover, T. D., & White, D. D. (2025). When perception is reality: Examining perceived accessibility of recreational public spaces through social space production. *World Leisure Journal, 67*(2), 241–263.