

Evaluation of Public Cultural Service Quality in Harbin Based on SPSS Software

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Abstract: The With the improvement of people's living standard, people pay more attention to their spiritual needs, and their demands for public cultural services are more diversified. On the basis of SERVQUAL's user-perceived service quality evaluation theory, this paper collects questionnaires of different social groups' satisfaction with Harbin's public cultural service quality, analyzes the data with SPSS.24 software, comprehensively evaluates Harbin's public cultural service quality, and puts forward some optimization suggestions for Harbin's public cultural service.

1 INTRODUCTION

The 20th CPC National Congress proposed to improve the modern public cultural service system and innovate the implementation of cultural projects for the benefit of the people. At present, people's living standards have improved significantly, the quality of the nation has increased significantly, and people's demand for spiritual culture has also increased significantly, and they hope that the government can provide public cultural services that meet their own needs. In this context, the government has been strengthening the provision of public cultural services, especially at the district, county and town levels, where many new public cultural service facilities have been added to museums, libraries and other public cultural institutions, and the quality of cultural services has been greatly improved.


In recent years, in accordance with the provisions of the Party Central Committee as well as the provincial government, Harbin City vigorously build a modern public cultural service system, and constantly meet the needs of the people's public cultural services. With the implementation of a series of government policies, the current public cultural services in Harbin City has been initially improved, in hardware construction, service activities, institutional reform, service mechanisms have made


good achievements. But how does the public feel about it? Where should the government continue to strengthen public cultural services in the future? Based on this, this paper selects the dynamic perspective of public perception and conducts an empirical research analysis based on SERVQUAL evaluation model on how to improve the quality of public cultural services in Harbin City.

2 RESEARCH METHODOLOGY AND MODEL CONSTRUCTION

2.1 Research Methodology

Based on the literature research and SERVQUAL service quality model, this paper combined the characteristics of public cultural services, firstly, 20 evaluation indexes in 5 dimensions were selected and a questionnaire was designed to measure the quality of public cultural services in Harbin City. Secondly, the questionnaire was collected by random sampling and active sampling method with the people of Harbin City as the survey target, and SPSS 24.0 software was used to analyze the data, including the analysis of reliability, validity and correlation. Then, calculate the comprehensive score of each index of public cultural service in Harbin, evaluate the quality

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of public cultural service in Harbin, and put forward some optimization suggestions.

2.2 Model Construction

SERVQUAL, which stands for "Service Quality", was proposed by American scholars Parasuraman, Zeithamal and Berry in 1988, and PZB explained the connotation and components of SERVQUAL, and determined The SERVQUAL evaluation model is based on customer perceptions and advocates the assessment of service quality based on customer's subjective perceptions, with the "service quality gap model" as the base point of evaluation (Parasuraman, Zeithaml, Berry 1988). The PZB team believes that the questions in the scale should be adjusted and modified appropriately when measuring service quality in different industries. Therefore, based on the SERVQUAL scale, this paper combines the existing literature and the characteristics and requirements of Harbin's public cultural services to form a scale for evaluating the quality of public cultural services, which is composed of 20 indicators in 5 dimensions.

3 RESEARCH DESIGN AND EMPIRICAL RESULTS

3.1 Research Design

3.1.1 Design of Measurement Indicators

The research object of this paper is the quality of public cultural services, which is a fuzzy emotional indicator that cannot be accurately quantified for research, so this paper adopts a fuzzy processing approach and proposes public cultural quality measurement dimensions and indicators with reference to the more mature SERVQUAL evaluation scale of the PZB team and combined with the National Public Cultural Services Program and Content and related practical situations. In this paper, the quality of public cultural services is divided into five dimensions: tangibility, reliability, responsiveness, assurance, and empathy.

Tangibility means that the service quality is an intangible feeling, so it can only be assessed laterally in terms of objective tangible products such as the spatial layout of public cultural venues, indoor environmental atmosphere, infrastructure equipment, and appearance of employees (Wang, 2022). Reliability refers to the ability of the government to accurately provide the promised services and to build

the credibility of the government through reliable services. Examples include the ability of service personnel to provide professional services, detailed promotional materials, and to safeguard the public's personal and property safety. Responsiveness refers to the government's ability to provide effective and convenient services, requiring service personnel to face the public in a friendly and kind manner, to understand the actual needs of the public, to respond to the public's needs in a timely manner and to quickly correct any problems that arise in the service. Assurance means having sufficient service personnel and service hours to meet the needs of the public (Chen & Cao, 2019). In addition, they should have professional knowledge and good language skills to respond accurately to the needs of the public. Empathy means that the service personnel can fully consider the public's feelings, put themselves in their shoes, and make them feel humane and caring (Le & Zhong, 2014).

3.1.2 Research Object

The questionnaire was designed to study the quality of public cultural services based on the public perception of the residents of Harbin City, and to understand the actual needs of the public for public cultural services through field surveys and visits, and to improve the design of the questionnaire to make it more scientific. The questionnaires were collected through active sampling of the elderly group over 60 years old, while the others were randomly sampled and distributed through online questionnaires by Questionnaire Star. A total of 405 questionnaires were collected, 405 were valid questionnaires, and the number of valid questionnaires reached the standard of model analysis.

3.2 Analysis of Research Results

3.2.1 Sample Situation Analysis

Using SPSS24.0 to realize the process of population frequency analysis.

Table 1: Demographic variable frequency analysis

Variable	Item	frequency	Percentage (%)
Gender	Male	190	46.91
	Female	215	53.09
Age	18-30 years old	113	27.90
	31-40 years old	107	26.42

	41-50 years old	96	23.70
	51-65 years old	89	21.98
Education	High school/junior high school and below	36	8.89
	College	67	16.54
	Bachelor's degree	227	56.05
	Master's degree and above	75	18.52
Place of residence	Urban permanent residence	223	55.06
	Suburban permanent residence	85	20.99
	Temporary residence in the city	97	23.95

According to the results of the above analysis, it can be seen that the questionnaire contains people of different ages and classes, which is in line with the requirements of the sample survey.

In terms of gender ratio, this questionnaire survey was designed for 190 males and 215 females. The difference between the male and female ratios is not significant, which matches with the actual gender ratio in Harbin City, indicating that the demand for public cultural services is consistent between males and females.

In terms of the age distribution of the sample, the largest proportion of young people aged 21-40 and middle-aged people aged 41-60 are in the golden age of life, with complex and diverse needs for public cultural services and a strong willingness to participate in public cultural services.

In terms of education level, undergraduates account for the majority of the total sample, which is basically consistent with the proportion of education in Harbin City, indicating that the questionnaire has a certain coverage and randomness.

In terms of the percentage of residence in the sample, 23.95% live temporarily in the city, and nearly a quarter of the inflow of foreign talents have the same demand for public cultural services in Harbin City.

3.2.2 Reliability Analysis

Reliability is a tool to test the reliability and stability of the questionnaire. This questionnaire uses SPSS 24.0 to test Cronbach's Alpha coefficient to realize the

reliability analysis process. The value range of reliability coefficient is 0-1. The closer the reliability is to 1, the higher the reliability is, and it is better to be above 0.7, which indicates that the scale data is available. If Cronbach's Alpha coefficient is below 0.6, it is necessary to re-compile the questionnaire.

Table 2: Questionnaire standardised reliability analysis

Analysis dimension	Number of items	Cronbach's Alpha
Tangibility	4	0.895
Reliability	4	0.830
Responsiveness	4	0.905
Assurance	4	0.874
Empathy	4	0.882
Overall	20	0.962

According to the above reliability analysis results, it can be seen that the standardization coefficients of the above five dimensions are all > 0.7, and the internal consistency of each index is good, so the questionnaire questions do not need to be adjusted. According to the overall reliability coefficient of the questionnaire, the standardized Cronbach coefficient is 0.962, which is between 0 and 1, indicating that the overall reliability of the questionnaire is very high, and the questionnaire is scientific and reliable.

3.2.3 Validity Analysis

Validity analysis is used to test the correctness and validity of the data, and higher validity indicates that the findings of the questionnaire are more true and valid. The questionnaire was administered using SPSS 24.0 software, and two main indicators, KMO (Kaiser-Meyer-Olkin) test and Bartlett's test of sphericity, were used to implement the validity analysis process.

Table 3: KMO values and Bartlett's sphericity test

KMO and Bartlett Calibration		
Kaiser-Meyer-Olkin measurement of sampling suitability.	of	.947
Bartlett's spherical check	Approx. cardinality	3320.872
	Chi-square	
	df	190
	Significance	.000

According to the results of the above exploratory analysis, it can be seen that the result of the coefficient of KMO test is 0.947, and the coefficient of KMO test takes values between 0 and 1. The closer

to 1 means that the validity of the questionnaire is better, so the validity of this questionnaire is very high. According to the significance of the sphericity test it can also be seen that the significance of this test is infinitely close to 0, so the questionnaire has good validity.

3.2.4 Correlation Analysis

Correlation analysis was used to measure the correlation between variables and the questionnaire was implemented using SPSS 24.0 for the correlation analysis process.

Table 4: Correlation analysis

Variables	Correlation	Tangibility	Reliability	Responsiveness	Assurance	Empathy
Tangibility	Pearson correlation	1				
Reliability	Pearson correlation	.650**	1			
Responsiveness	Pearson correlation	.710**	.819**	1		
Assurance	Pearson correlation	.700**	.714**	.816**	1	
Empathy	Pearson correlation	.676**	.739**	.803**	.797**	1

** . Correlation is significant at the 0.01 level (two-tailed).

Correlation analysis was used to measure the correlation between variables and the questionnaire was implemented using SPSS 24.0 for the correlation analysis process.

4 CONCLUSION

The data analysis using SPSS24.0 software shows that the questionnaire has good reliability and validity, and the four analysis dimensions of public cultural service quality, namely, tangibility, reliability, responsiveness, assurance and empathy, have good correlation. The questionnaire design is reasonable, and the questionnaire title does not need to be adjusted. It is scientific to use this questionnaire to analyze the quality of public cultural service in Harbin City.

After verifying the reliability and validity and establishing the evaluation model, the weight of each index should be determined. Referring to the quality evaluation method of Sun Hao (Sun & Ma 2022), the arithmetic average score \bar{x}_i of each index is calculated, which is brought into formula (1), and then substituted into formula (1) to calculate the important weight ω of each index.

$$\omega = \frac{\bar{x}_i}{\sum_{i=0}^n \bar{x}_i} \quad (i=1,2,3,\dots,20) \quad (1)$$

Factor analysis is carried out by SPSS 24.0 software. The weight of the factor load of each item in each dimension in the total factor load is the weighted weight ϵ , which is brought into formula (2) to calculate the comprehensive weight ξ of each index.

$$\xi = \frac{\omega_i \epsilon_i}{\sum_{i=0}^n \omega_i \epsilon_i} \quad (i=1,2,3,\dots,20) \quad (2)$$

Substituting into formula (3), the comprehensive score C of public health quality is obtained:

$$C = \frac{\sum \xi_i \bar{y}_i}{\sum \xi_i} \quad (i=1,2,3,\dots,20) \quad (3)$$

Among them, C is the comprehensive score of public service quality, ξ_i is the comprehensive weight of each index of public cultural service quality, and \bar{y}_i is the average score of satisfaction of each index.

By substituting the relevant data, the comprehensive score of Harbin's public cultural service quality is 3.7303.

The questionnaire was divided into five levels of "very satisfied, satisfied, average, dissatisfied, and very dissatisfied" using a unified evaluation standard, and the scores were assigned as "5, 4, 3, 2, and 1" respectively. The average score of each index was then calculated and ranked according to the data in the sample. See the following table for the indexes, dimensions and overall public service quality evaluation scores and ranking of Harbin Public Cultural Service Scale.

Table 5: Comprehensive score of public cultural service quality in Harbin City.

Dimensional	Measurements	Overall score	Sorting	Dimensional score
Tangibility	Reasonable spatial layout	3.9365	4	3.9548
	Comfortable indoor environment	4.0487	1	
	Adequate service facilities	3.8682	6	
	Staff appearance is neat and tidy	3.9658	2	
Reliability	Provide professional services	3.6878	13	3.7951
	Detailed service publicity materials	3.7707	10	
	Real time public cultural services	3.7560	12	
	Personal and property safety is guaranteed	3.9658	2	
Responsiveness	Staff are friendly and kind	3.8634	7	3.6707
	Actively understand the actual needs of the public	3.5902	17	
	Respond to the needs of the public in a timely manner	3.6390	14	
	Correct problems in service in time	3.5902	17	
Assurance	Access to abundant public cultural service resources	3.7609	11	3.7524
	Public interest is given priority in service delivery	3.8976	8	
	Adequate staffing of service venues	3.6146	16	
	Service hours can meet the needs of the public	3.7951	9	
Empathy	Staff actively promote public cultural information	3.6341	15	3.6292
	The staff gives feedback on complaints from the public	3.5756	19	
	The institution is able to make return visits to customers	3.3804	20	
	Gives personalized care to special groups	3.9268	5	
Overall score		3.7303		

The evaluation results show that the quality of public cultural services in Harbin City has an overall score of 3.7303, which is between "average" and "satisfactory", and the quality of public cultural services in Harbin City is in the middle to upper level in five dimensions. Only the tangible dimension is close to "satisfied", which indicates that the construction of public cultural venues and infrastructure in Harbin City is relatively complete, but the responsiveness and empathy of public cultural services are low, and there is much room for improvement.

5 SUGGESTIONS

5.1 Cultivate Professional Public Cultural Service Personnel

The quality of public cultural service personnel affects the public's perception of public cultural services. According to the survey, the overall rating of 3.6390 for the indicator "public cultural service personnel are able to meet the needs in a timely manner" is ranked 14 among all indicators, indicating

that the construction of talents in public cultural service places in Harbin City needs to be strengthened.

Enhancing the public cultural talent service in Harbin City can be achieved through the following points: First, increasing the number of public cultural service personnel in Harbin City. The government can strengthen the internal training and external introduction of cultural talents. Second, to provide ideological guidance to public cultural service personnel. Cultivate service personnel to treat the public with an easy-going, friendly attitude. Third, the professional knowledge of public culture service personnel should be cultivated so that they can accurately grasp government policies and relevant legal provisions on public culture, timely meet the needs of the public and answer public questions.

5.2 Establish a Reasonable Public Feedback Mechanism

The improvement of the quality of public cultural services requires the joint efforts of both the government and the public, so it is necessary to establish a smooth communication and feedback mechanism for the public. According to the survey, the score of empathy dimension is the lowest. Therefore, it is necessary to strengthen the public feedback mechanism for public cultural services in Harbin City.

First of all, the public needs smooth channels and convenient platforms to express their needs. The government should establish offline institutions and online platforms that specifically receive suggestions and evaluations from the public, combine online and offline, and actively improve the quality of public cultural services from the needs of the public itself. Secondly, we should strengthen the social supervision of public cultural services. We should establish online and offline supervision boards, improve the supervision and management. Vigorously publicize the supervision board so that the public can actively express their opinions and promote the improvement of the quality of public cultural services in Harbin City.

5.3 Strengthen Public Cultural Services Publicity

Strengthening public cultural services to meet the spiritual and cultural needs of the masses is of great significance in promoting the construction of urban civilization. The survey shows that 44.38% of people don't agree that they have access to public cultural

propaganda materials with detailed contents. The root cause of this result is the government's insufficient publicity of public cultural services.

Enhancing the public cultural talent service in Harbin City can be achieved through the following points: First, we should make full use of post publicity. The public culture institutions such as libraries, museums, and comprehensive street cultural stations should make full use of their positioning, displaying real-time public culture information in the halls of museums by placing relevant posters, standing boards, and LED screens, so that the public can receive relevant public culture service information. Second, the use of new media for propaganda. Libraries and museums at all levels can actively use the advantages of new media, adopt modern marketing methods such as public numbers, microblogs, TikTok and Little Red Book, innovate marketing contents, close the distance between the public and public cultural services, and make more people understand and enjoy the public services.

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