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User-Centered Quality Evaluation of Public Cultural Services: A Postprint

Authors: Chen Yijin, Cao Shujin

Date: 2023-07-26T00:00:00+00:00

Abstract

[Purpose/Significance] Evaluation of public cultural service quality constitutes a crucial component of public cultural service system construction. Developing an evaluation model for public cultural service quality from a user-centered perspective serves as a complement to service effectiveness evaluation research conducted from an institutional viewpoint.

[Method/Process] Grounded in the service quality evaluation model, PSQ model, and LibQUAL+TM, this study constructs a user-centered evaluation model for public cultural service quality. Confirmatory factor analysis and path analysis are employed to assess the reliability and structural validity of the measurement instrument.

[Results/Conclusion] Users' evaluation of public cultural service quality is composed of four dimensions: tangibility, transparency, relevance, and suitability of public cultural services. Users' perceived levels of these four dimensions exert a significant positive influence on their satisfaction levels. The evaluation model demonstrates satisfactory reliability, validity, and goodness-of-fit, thereby providing valuable references for future research and practical implementation.

Full Text

Preamble

Vol. 63 No. 17 September 2019 ChinaXiv Cooperative Journal

Research on User-Centered Evaluation of Public Cultural Service Quality

Chen Yijin¹, Cao Shujin²

¹School of Economics and Management, South China Normal University, Guangzhou 510006

²School of Information Management, Sun Yat-sen University, Guangzhou 510006

Abstract

[Purpose/Significance] Evaluating public cultural service quality constitutes a critical component of public cultural service system development. Constructing an evaluation model for public cultural service quality from a user-centered perspective supplements existing research on service effectiveness evaluation from an institutional viewpoint. **[Method/Process]** Grounded in service quality evaluation models, the PSQ model, and LibQUAL+TM, this study develops a user-centered evaluation model for public cultural service quality. Confirmatory factor analysis and path analysis are employed to examine the scale's reliability and structural validity. **[Result/Conclusion]** User evaluations of public cultural service quality comprise four dimensions: tangibility, transparency, relatedness, and suitability of public cultural services. Users' perceived levels of these four dimensions exert significant positive influence on their satisfaction levels. The evaluation model demonstrates good reliability, validity, and goodness-of-fit, providing reference for subsequent research and practical implementation.

Keywords: public cultural services; service quality; user evaluation; user satisfaction

Classification Number: G250

DOI: 10.13266/j.issn.0252-3116.2019.17.007

In August 2018, at the National Conference on Propaganda and Ideological Work, General Secretary Xi Jinping reiterated the need to promote standardization and equalization of public cultural services, improve the public cultural service system, expand coverage and applicability of basic public cultural services, and enhance people's cultural sense of gain and happiness. Public cultural services refer to the provision of cultural facilities, venues, activities, and products designed to meet the public's basic cultural needs. These services represent an essential component of government public service functions and serve as a cultural bridge connecting government with society and citizens. Analysis reports indicate that China's public cultural service system has been further improved, achieving unprecedented accomplishments with abundant supply across various dimensions. However, challenges remain, including insufficient guidance, low utilization rates of facilities and equipment, and inadequate equalization. Enhancing public cultural service effectiveness represents an important task in building China's modern public cultural service system, with the ultimate goal of increasing users' sense of gain. Effectiveness refers to the ability to select appropriate goals and achieve them, while public cultural service quality evaluation can measure current service effectiveness levels and identify gaps between current status and established objectives. Simultaneously, quality evaluation forms the foundation for establishing service standards and serves as a lever for improving public cultural services.

From the user perspective, judgments regarding public cultural service investment and acquisition ultimately depend on user perception, which directly shapes public satisfaction with these services. Since users are individuals with distinct personalities, perceptions, and expectations, public cultural service institutions at all development stages should prioritize improving services from the user perception perspective. This approach prevents facility construction or cultural activity resources and service provision from deviating from target population needs, thereby maximizing the utility of public cultural service system investments.

This study develops and empirically tests an operational scale from the user perception perspective, based on the current status of China's domestic public cultural service system development and the connotation of public cultural service quality. By constructing a valid and suitable evaluation model for public cultural service quality, this research aims to provide references for quality measurement, gap identification, and strategy formulation for service improvement.

1 Literature Review

Public cultural services represent the starting point and value foundation for government protection of citizens' basic cultural rights and construction of modern public cultural service systems. Essentially, they constitute a form of cultural governance that communicates directly with the public and operates within a social environment dedicated to providing cultural information to citizens. The Public Cultural Services Guarantee Law of the People's Republic of China explicitly requires establishing a public cultural service evaluation system with public participation, making user-centered public cultural service quality evaluation research urgently needed.

Perspectives for evaluating public cultural service quality typically include two types: process quality evaluation and perceived quality evaluation.

1.1 Process Quality Evaluation

Process quality evaluation relies on public service input quantities and resulting objective performance metrics, such as internationally recognized indicators including target population coverage, participation rates, visitation rates, resource circulation rates, service costs, and input-output ratios. The focus lies in effective quality management from the service provider's perspective, exemplified by venue area standards, facility and equipment standards, and staffing requirements.

Current research on public cultural service effectiveness evaluation predominantly employs process quality evaluation, focusing on topics such as constructing public cultural service performance evaluation indicator systems, analyzing evaluation indicator systems for public digital culture construction, selecting performance evaluation dimensions for public cultural services, evaluating service capacity, and strategies for enhancing public cultural service effectiveness.

These studies provide valuable explorations of performance evaluation for public cultural services or public digital cultural services from a process quality management perspective. However, their evaluation objects are limited to government performance without considering the active roles of other entities in public cultural service system development.

1.2 Perceived Quality Evaluation

From the perceived quality evaluation perspective, effective service quality judgments derive not from observed facts but from subjective feelings, with focus on quality that users can perceive. Measurement researchers typically conceptualize service quality as a complex, multidimensional construct. Appropriate service quality measurement helps service providers determine whether they can accurately identify and deliver required services to users.

Current public cultural service evaluation research from the user perspective remains distant from “perceived quality evaluation,” primarily employing qualitative and interpretive research methods. For example, some studies conduct in-depth analyses of public usage pathways for public digital cultural services, revealing that service entities influence public information literacy through support and content elements, ultimately determining service effectiveness. Others theoretically explore public cultural service effectiveness evaluation indicator systems integrating service performance and user evaluation, or construct evaluation indicator systems for public cultural service accessibility from an accessibility perspective. While these studies provide theoretical references for constructing user evaluation frameworks and propose indicators for evaluating service effectiveness or performance, they lack empirical testing, leaving the validity, suitability, significance, and operability of these indicators unclear.

2 Theoretical Foundation for User-Centered Evaluation of Public Cultural Service Quality

The prerequisite for user-centered public cultural service quality evaluation is whether user subjective perception can be used to analyze public cultural service quality levels and provide guidance for service improvement. Unlike process quality management perspectives on public cultural service performance evaluation, the foundation for establishing user perception-based quality evaluation models is “only customers can judge quality; all other judgments are irrelevant.” User perception-based evaluation offers an effective approach to addressing mismatches between public cultural service supply and public demand and improving service applicability.

Numerous studies from SERVQUAL and LibQUAL+™ demonstrate that allowing users to select values corresponding to their felt states on an ordinal scale from worst to best enables quantitative measurement of user subjective perception.

Specific methods for quantitatively measuring user perception of public cultural services can reference three theoretical frameworks: SERVQUAL, the Public Service Quality Model, and the library service quality evaluation model LibQUAL+TM.

2.1 SERVQUAL

The perceived service quality evaluation model SERVQUAL, developed in the commercial sector, measures service quality across five dimensions: tangibility, responsiveness, reliability, assurance, and empathy, demonstrating good applicability in micro-service domains. SERVQUAL represents the earliest and most successful achievement in user-centered service quality evaluation research, providing important theoretical reference for designing user-centered public cultural service quality evaluation models.

However, public cultural services differ fundamentally from commercial services. Primarily government-funded, public cultural service system construction involves venue development and personnel support. Two SERVQUAL dimensions can be adapted: service venue and facility quality (tangibility) and staff competence and attitude (assurance).

2.2 Public Service Quality Model (PSQ)

In public service research, W. Sabadie (2003) proposed the concept of public service quality based on new public management theory, introducing a legal model to SERVQUAL. This model comprises four dimensions: transparency, participation, complaint management, and fairness. In 2016, M. Guenoun et al. refined the PSQ model, proposing that perceived public service quality consists of four dimensions: reliability-transparency, public-frontline staff relationships, tangible assets, and ethics, advancing user-centered public service quality evaluation from qualitative to quantitative research.

The PSQ model suggests that SERVQUAL's indicator system cannot fully cover principles such as equalization, continuity, or variability in public services. For example, the equalization principle in public cultural services requires ensuring equal public cultural service rights for all citizens despite regional disparities in system development, creating a sense of cultural gain for everyone. This sense of gain derives partly from perception of public cultural service transparency, which must be incorporated into evaluation model design.

2.3 LibQUAL+TM

In the closely related library service domain, the Association of Research Libraries (ARL) developed the LibQUAL+TM evaluation model in 2000. After multiple revisions, LibQUAL+TM measures library service quality across three dimensions (service impact, information control, library environment) and three perspectives (perceived value, expected value, tolerance). The improved In-SyncSurveys model based on LibQUAL+TM includes five dimensions: commu-

nication, service quality, service delivery, facilities and equipment, librarians, and virtual services. Domestic scholars have applied LibQUAL+TM to public library service quality evaluation with modifications, such as using three dimensions (collection services, librarian services, other services), four dimensions (information resources, library environment, librarians, social responsibility), or six dimensions (communication, service delivery, facilities, librarians, information resources, social responsibility).

Public libraries constitute an important component of the social public cultural service system, occupying a principal position within it. LibQUAL+TM and its improved scales in public library service quality research provide important theoretical reference for user-centered public cultural service quality evaluation. Beyond infrastructure, the public demands cultural resources and activities (e.g., literature resources, lectures, training, cultural activities, artworks, intangible cultural heritage works and skills). Therefore, public cultural service quality evaluation must include public perception of resources and activities as measurement content.

3 Construction of User-Centered Public Cultural Service Quality Evaluation Model

Evaluating public cultural service levels regarding venues and facilities, service personnel, and cultural resources and activities from a user-centered perspective can effectively analyze the match between service supply and public demand. In the specific context of public cultural services, this study summarizes these into three dimensions: tangibility, relatedness, and suitability, corresponding to user perceptions of venue and facility quality, service personnel, and resources and activities.

Spatial distance, transportation costs, and time costs for urban and rural residents to access public cultural service institutions constitute accessibility evaluation indicators. W. Sabadie argued for incorporating transparency into public service quality evaluation, and M. Guenoun et al. empirically validated that transparency represents a significant factor in public service quality evaluation. Based on China's public cultural service realities, this study summarizes information transparency regarding free services, venues, and activities, along with participation convenience, into one dimension: public cultural service transparency.

To effectively measure service quality, this study employs "user satisfaction" as the dependent variable reflecting actual public cultural service effectiveness, with user perceptions of tangibility, relatedness, suitability, and transparency as factors influencing satisfaction. The user evaluation model is constructed as shown in Table 1 .

4 Empirical Testing of User-Centered Public Cultural Service Quality Evaluation Scale

4.1 Scale Development and Pre-test

The scale includes secondary indicators corresponding to five primary indicators in the indicator system, plus user demographic variables (gender, age, occupation, education, and monthly household income per capita). User evaluation options employ a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Before formal questionnaire release, interviews were conducted to standardize scale content. Ten participants were selected (3 graduate students, 3 community elders, 3 cultural station staff, and 1 middle school student) to assess comprehension of each questionnaire statement, soliciting feedback to revise questions and minimize literal comprehension difficulty, thereby ensuring content validity.

The questionnaire was distributed online using convenience sampling to cover diverse occupational and age groups. The first-round test was conducted in Guangzhou from July 20-26, 2018. Among returned questionnaires, 360 fully completed all measurement items. After screening for questionnaires with complete demographic information (gender, age, occupation, and household registration), 318 valid questionnaires were obtained. With 23 measurement variables and 318 samples, the sample-to-variable ratio was 13.25, exceeding the commonly recommended threshold of 10, indicating adequate sample size. Pre-test data were used for reliability analysis.

Reliability refers to internal consistency, tested using Cronbach's alpha coefficient. The alpha values for 23 observed variables are shown in Table 2. The variable "TM2 time spent on the road" had an alpha value of 0.139 (below 0.5), and its deletion improved overall scale reliability.

4.2 Formal Distribution and Sample Characteristics

Based on pre-test results, the modified scale comprised 22 variables. The questionnaire distribution and screening rules remained consistent with the pre-test. Distribution occurred from December 1-15, 2018, nationwide, yielding 631 valid questionnaires covering Guangdong (98), Zhejiang (92), Fujian (91), Hainan (91), Henan (88), Shanxi (39), Guizhou (33), Guangxi (30), Beijing (29), Shanghai (19), Liaoning (11), and Hubei (10). Sample demographic characteristics and participation frequency in public cultural services are shown in Table 3, with male respondents fewer than female, covering all age groups, occupations, and three household registration types.

4.3 Data Analysis

Measurement model development and testing followed the scale validation process proposed by G. A. Churchill, supplemented by research from C. Fornell and D. Larcker and D. Gerbing and J. Anderson, using confirmatory factor analysis.

sis to examine scale reliability and validity and confirm robustness. Statistical analysis employed SPSS 20.0 and LISREL 8.7.

4.3.1 Reliability Testing The overall scale reliability was 0.964, with Cronbach's alpha coefficients for each construct ranging from 0.869 to 0.950 (Table 5), indicating high reliability.

4.3.2 Validity Testing Determining relationships between observed and latent variables is crucial for validity testing. This study used confirmatory factor analysis to test convergent and discriminant validity.

(1) Confirmatory Factor Analysis. Using 22 variables as observed variables, analysis results are shown in Table 4. Modifying from a 3-factor to a 5-factor model reduced chi-square by 157.62 with 7 degrees of freedom. The 5-factor model yielded $\chi^2(199) = 752.56$ ($P = 0.0$), $RMSEA = 0.093$, $NNFI = 0.98$, $CFI = 0.98$, $IFI = 0.98$, and $RFI = 0.97$, indicating good model fit according to reference values.

(2) Structural Validity Testing. To further examine validity, this study investigated composite reliability (CR) and average variance extracted (AVE) for the 5-factor model. Table 5 shows CR values between 0.890 and 0.958, all exceeding the 0.700 standard, while all AVE values exceeded the 0.500 standard, indicating good convergent validity. All observed variable factor loadings exceeded 0.500, demonstrating satisfactory convergent validity. Discriminant validity was tested by comparing completely standardized correlation coefficients between dimensions with the square root of each dimension's AVE. When a dimension's AVE square root exceeds its correlations with other dimensions, sufficient discriminant validity exists. Table 6 shows all correlations between four independent variables were smaller than each variable's AVE square root, meeting test requirements and indicating good discriminant validity.

(3) Predictive Validity. Using user satisfaction as the dependent variable, predictive validity was analyzed to test whether the four factors—suitability perception, relatedness perception, tangibility perception, and transparency perception—significantly influence satisfaction, thereby determining the scale's effectiveness in measuring public cultural service quality.

Path analysis results (Figure 1 [Figure 1: see original paper]) show all four independent variables significantly influence user satisfaction ($R^2 = 0.92$), indicating strong explanatory power. The highest path coefficient was suitability perception ($\beta = 0.48$, $t = 8.56$), followed by relatedness perception ($\beta = 0.30$, $t = 5.26$), transparency perception ($\beta = 0.17$, $t = 2.58$), and tangibility perception ($\beta = 0.067$, $t = 2.52$). All four paths were significant at the 0.00 level. Thus, from the user perspective, tangibility, transparency, relatedness, and suitability of public cultural services all significantly affect satisfaction, meaning satisfaction formation is influenced by perceptions of these four aspects.

5 Discussion of Research Results

The evaluation subject for user-centered public cultural service quality is the public. The evaluation model, constructed by integrating equalization and applicability principles of public services with quality evaluation models from commercial sectors, effectively measures perceived service quality. User-perceived service quality has a structural composition divisible into four main dimensions.

(1) Tangibility of Public Cultural Services refers to spaces, physical facilities, and equipment, specifically including four aspects: user-perceived venue spatial comfort and aesthetics, adequacy of facilities and equipment, timeliness of infrastructure management and maintenance, and appropriateness of service hours. Tangibility perception is premised on China's increasingly improved public cultural service system, particularly the three-tier infrastructure at district/county, street/town, and village/community levels, which provides crucial venues for grassroots public cultural services. On one hand, services are intangible, requiring tangible venues and facilities for access. On the other hand, venue and facility construction and management form the foundational prerequisite for public behavioral access to and psychological acceptance of public cultural services.

(2) Relatedness of Public Cultural Services refers to interaction quality between service staff and users. Staff are key factors in delivering public cultural services to the public, with their knowledge, courtesy, and demonstrated understanding of public needs determining interaction quality. Public cultural service institutions cannot provide quality services without social understanding and emotional communication from frontline staff. Some studies term this dimension affective or emotional, emphasizing emotional exchange during service interactions. In the public cultural service quality evaluation context, this study considers it a service delivery-related aspect, specifically including three indicators: staff service attitude, professional competence, and ability to understand user needs.

(3) Transparency of Public Cultural Services refers to disclosure to the public, using multiple channels to disseminate information to all citizens, expanding audience reach, and making services known and accessible. Transparency specifically includes five indicators: public awareness of venues and facilities, free policy awareness, specific activity awareness, specific service awareness, and transportation information awareness for participation. Transparent administration is crucial for enhancing government service capacity under public service philosophy and represents an important hallmark of service-oriented government. Minimizing opaque public power exercise requires strengthened information disclosure. Transparency can improve perceived public service fairness and is a key factor influencing public trust in government. This study finds that user perception of transparency in public cultural services is significant in quality evaluation.

(4) Suitability of Public Cultural Services refers to whether cultural re-

sources and activities are appropriate for the public. In public cultural service system development, cultural resources and activities are important carriers for cultural transmission, value delivery, and artistic inheritance, fundamentally meeting public cultural needs. Suitability includes four indicators: public perception of resource and activity quality, quantity, variety, and content, emphasizing service connotation and manifestation forms that highlight essential characteristics of public cultural services. Form is the external expression of connotation, while connotation is the soul of form. Why public culture emphasizes service, for whom, what to serve, and how to serve all require certain forms. Public cultural information resources constitute a major component of citizens' basic cultural rights, including public digital and physical cultural resources, while service activities encompass mass cultural activities, reading, lectures, exhibitions, training, and intangible cultural heritage activities. Service content and conditions most significantly impact user satisfaction among public cultural service recipients, and this empirical study confirms that suitability is the key factor in user evaluation of public cultural service quality, with far greater impact on satisfaction than the other three dimensions.

Meanwhile, in user evaluation of public cultural service quality, user satisfaction serves as a dimension reflecting overall public judgment of service effectiveness. Six indicators measure satisfaction from five perspectives: satisfaction with relatedness, transparency, tangibility, suitability, and overall satisfaction, enabling both overall and sub-dimensional satisfaction evaluation.

User satisfaction is significantly influenced by the four independent variables of service quality. User perception significantly and positively affects satisfaction, with path coefficients serving as influence coefficients, ordered from largest to smallest as: suitability, relatedness, transparency, and tangibility.

7 Research Limitations and Future Recommendations

The user-centered public cultural service quality evaluation model measures service quality from the user perception perspective, following rigorous scale development procedures and validating effectiveness and credibility through reliability, content validity, and structural validity testing. The scale demonstrates high overall reliability and validity, with structural equation model fit indices performing well. However, path coefficients in the analysis warrant attention: (1) Given this study's primary objective of constructing an evaluation indicator system, convenience sampling was employed with limited scope, while significant regional differences exist in grassroots public cultural service system development. Therefore, the influence coefficients of the four dimensions (independent variables) on satisfaction (dependent variable) require further testing through targeted sampling across regions. (2) Specific indicators of the validated public cultural service quality evaluation model need continued refinement in future research to enhance universality. (3) Model validation relied solely on user perception measurement; future research should incorporate user expectation and tolerance measurements. Through pairwise comparisons between expectation

and perception, perception and tolerance, and expectation and tolerance values, gaps between service levels and user needs can be calculated, making evaluation results more referential and actionable for service quality improvement strategy formulation.

Acknowledgments

During manuscript preparation, this paper benefited from valuable revision suggestions by Professor Zhou Wenjie from Northwest Normal University Business School and anonymous reviewers, for which we express sincere gratitude.

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Author Contributions:

Chen Yijin: Proposed research topic, designed evaluation model and scale, collected and analyzed data, wrote manuscript.

Cao Shujin: Determined paper framework, revised evaluation model, revised manuscript.

Keywords: public cultural service; service quality; user evaluation; user satisfaction

The following advertisement content has been omitted as per translation guidelines:

Yangtze River Economic Belt Big Data Platform includes green development index, inclusive development index, and high-quality development index...

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