

A Study on the Accessibility Evaluation of Public Culture Cloud Apps Based on Multi-source Data*

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Abstract

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Full Text

[Users · Services]

A Study on the Accessibility Evaluation of Public Culture Cloud Apps Based on Multi-source Data*

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Abstract Improving the accessibility of public culture cloud Apps is a strategic path for promoting the high-quality development of public digital cultural services and inclusive cultural benefits. This study constructs an accessibility evaluation indicator system for public culture cloud Apps, and verifies the indicator system and assigns indicator weights through expert consultation and the analytic hierarchy process. Taking provincial-level public culture cloud Apps as the evaluation objects, it comprehensively employs data collection methods such as online research, platform investigation, and experimental methods to obtain subjective and objective evaluation data. The overall evaluation score is calculated as 3.36, which is at the qualified level; the scores of the five dimensions all fall between 3 and 4 points. Accordingly, targeted recommendations are proposed for public culture cloud Apps, with a view to collaboratively optimizing all dimensions and refining the pathways for improving the accessibility of the public digital cultural service system.

[Keywords] public culture cloud App multi-source data accessibility evaluation indicators

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Introduction

With the rapid iteration of mobile Internet technology, the public culture cloud App has become an important carrier for disseminating public culture and enhancing citizens' cultural literacy. This mobile and digital service model can not only significantly improve the public's awareness of and participation in public cultural services, but also further realize the precise reach and effective supply of diversified public cultural services. However, today, when the construction of public culture cloud Apps is relatively widespread, the usage rate of Apps and the degree of match between their service supply and public demand still urgently need to be improved[1]. On the basis of existing research, this study constructs an accessibility evaluation indicator system in light of the characteristics of public culture cloud Apps, and evaluates provincial-level Apps as the objects of study, with a view to effectively improving the accessibility of public culture cloud Apps and further refining the evaluation system and application scenarios for the accessibility of public digital cultural services.

1 Literature Review

Current academic research on public culture cloud platforms has already achieved certain results. Existing research themes mainly focus on three aspects: platform construction, user needs and behavior analysis, and service evaluation. At present, according to service functions, public cultural service Apps in China can be divided into four major categories: specialized public cultural service Apps, public cultural service extension Apps, public service Apps containing cultural service content, and news media Apps[2]. As the main body of public cultural service Apps, public culture clouds should make full use of user data[3], develop intelligent cloud platforms from the platform infrastructure layer, service support layer, and intelligent application layer[4], emphasize resource construction, subdivide multimodal resource types, and clarify standards and norms[5-6]. Platform resource allocation is influenced by user needs[7], which are mainly concentrated in resource acquisition, activity forms, publicity and promotion, and other aspects[8]. Through sentiment analysis, it can be found that the public's organizational needs, platform needs, and activity needs are external needs, while participation motivation, activity expectations, perceived value, and the like are internal needs[9]. When needs are triggered as user utilization behavior, user experience can be improved from dimensions such as aesthetics, content, retrieval, needs, and interaction[10], and users' continued usage intention can be influenced by

enhancing user satisfaction and perceived usefulness[11]. At present, public culture cloud services suffer from problems such as mismatches between supply and demand, and deficiencies in service quality and efficiency[12]. Existing studies mostly evaluate a small number of representative platforms[13–14], construct service effectiveness evaluation indicator systems from the dimensions of input, capability, and effect[15], and some also extract strategies for refining public culture cloud services from four dimensions—services, resources, venues, and users—in order to promote the improvement of regional public cultural service effectiveness[16].

In summary, academic research on public culture clouds mainly focuses on single-case analysis; that is, it tends to conduct specialized and concentrated studies on the national public culture cloud or local public culture cloud platforms. Moreover, most current studies adopt a single perspective of either platform supply or user demand, and relatively few deeply explore the adaptability between supply and demand for public culture cloud Apps from the dual perspective of supply and demand. The theory of “accessibility” has also not yet been applied to specific public culture cloud App practices. All of the above provides ample research space for this study.

2 Construction of an Accessibility Indicator System for Public Culture Cloud Apps

The accessibility of public culture cloud Apps is a measure of such public digital cult—

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...the concept of the “degree of fit” between the supply platform and the needs of the general public needs to be transformed into a series of interrelated indicator dimensions for measurement.

2.1 Establishment and Interpretation of the Indicator System

The establishment of the indicator system mainly drew on the classic international “5A” and “4A” accessibility evaluation frameworks [17–18], the accessibility evaluation framework for the public cultural service system constructed by domestic scholars Wang Qian and Wu Licai [19–20], and the public digital cultural service accessibility framework established by this research group on the basis

of comprehensive research [21]. Combining the characteristics of the app, this study ultimately constructed a preliminary five-dimensional evaluation framework for the accessibility of public culture cloud apps—obtainability, awareness, approachability, acceptability, and adaptability—including 5 first-level indicators, 13 second-level indicators, and 31 third-level indicators, as shown in Table 1.

Table 1 Evaluation Indicator System for the Accessibility of Public Culture Cloud Apps

First-level indicator	Second-level indicator	Third-level indicator	Description of the third-level indicator	Reference source
Obtainability	Obtainability of devices and networks	Mobile device	Whether a tablet computer/mobile phone is obtainable	Penchansky R et al. [17], Peters D H et al. [22]
Obtainability	Obtainability of devices and networks	Data network	Whether mobile data/Wi-Fi is obtainable	Penchansky R et al. [17], Peters D H et al. [22]
Obtainability	Obtainability of the service platform	Download and installation channel	Whether it can be downloaded and installed, accessed, and registered	Dai Yanqing et al. [21], Xu Xukan et al. [23]
Obtainability	Obtainability of the service platform	System stability	Whether phenomena such as crashes, freezing, or slow loading occur during use	Dai Yanqing et al. [21], Xu Xukan et al. [23]
Obtainability	Obtainability of digital cultural resources	Resource quantity	Whether the quantity of digital cultural resources meets users' needs	Penchansky R et al. [17], Feng Xian et al. [24], Wang Meng et al. [25]

First-level indicator	Second-level indicator	Third-level indicator	Description of the third-level indicator	Reference source
Obtainability	Obtainability of digital cultural resources	Resource types	Whether the thematic types of digital cultural resources are diverse	Penchansky R et al. [17], Feng Xian et al. [24], Wang Meng et al. [25]
Obtainability	Obtainability of digital cultural resources	Resource forms	Whether the forms of digital resources (e-books, videos, audio, pictures, VR) are diverse	Penchansky R et al. [17], Feng Xian et al. [24], Wang Meng et al. [25]
Obtainability	Obtainability of service consultation	Human service	Whether there are multiple channels for contacting human service	Wang Qian et al. [19]
Obtainability	Obtainability of service consultation	Intelligent service	Whether there are intelligent service channels that provide timely replies	Wang Qian et al. [19]
Awareness	Awareness of public publicity	Coverage degree of publicity scope	Whether the public culture cloud conducts account publicity on multiple new-media platforms	Penchansky R et al. [17], Dai Yanqing et al. [21]

First-level indicator	Second-level indicator	Third-level indicator	Description of the third-level indicator	Reference source
Awareness	Awareness of public publicity	Awareness of publicity media	Whether the new-media platforms on which the public culture cloud has settled are familiar to the public	Penchansky R et al. [17], Dai Yanqing et al. [21]
Awareness	Awareness of public publicity	Attractiveness of publicity content	The attractiveness to users of the publicity content of the public culture cloud's new-media accounts	Penchansky R et al. [17], Dai Yanqing et al. [21]
Awareness	Awareness of public publicity	Release frequency of publicity content	Whether the release frequency of publicity content on the public culture cloud's new-media accounts meets users' expectations	Penchansky R et al. [17], Dai Yanqing et al. [21]
Awareness	Awareness of the app	Users' awareness of the app brand	Whether users are aware of the app	Si Xinli [26]
Awareness	Awareness of the app	Users' awareness of app content	Whether users understand the main service content	Si Xinli [26]

First-level indicator	Second-level indicator	Third-level indicator	Description of the third-level indicator	Reference source
Approachability	Barrier-free service participation	Understandability and usability of core functions	Whether users can understand and use the core functions	Dai Yanqing et al. [21], GB/T 37729-2019 [27]
Approachability	Barrier-free service participation	Adjustability of user-adaptive modes	Whether there is a youth mode and an elderly-friendly mode, and whether font size can be adjusted	Dai Yanqing et al. [21], GB/T 37729-2019 [27]
Approachability	Barrier-free service participation	Help system	Whether usage help and operation instructions are provided	Dai Yanqing et al. [21], GB/T 37729-2019 [27]
Approachability	Ease of use of the service system	Identifiability	Whether the content and functions are clear and explicit, and whether the textual expression is precise	Hou Xueyan et al. [12], GB/T 37729-2019 [27]
Approachability	Ease of use of the service system	Accessibility	Whether the hierarchical design makes it easy for users to find and access service content	Hou Xueyan et al. [12], GB/T 37729-2019 [27]

First-level indicator	Second-level indicator	Third-level indicator	Description of the third-level indicator	Reference source
Approachability	Ease of use of the service system	Operability	Whether customary operation methods are adopted and whether the operation steps are simple	Hou Xueyan et al. [12], GB/T 37729-2019 [27]

Table 1 (continued)

Primary indicator	Secondary indicator	Tertiary indicator	Description of tertiary indicator	Reference source
Acceptability	User experience of service content	User-perceived usefulness of service content	Whether users believe the service content provided is valuable	Liu Jiajing et al. [11]
Acceptability	User experience of service content	Users' sense of immersion when using the service	Whether users can stay focused when using the service	Liu Jiajing et al. [11]
Acceptability	User experience of service content	Users' willingness to continue using the service	Whether users are willing to continue experiencing the cultural content	Liu Jiajing et al. [11]
Acceptability	Friendliness of service form	User interaction form	Whether users' sense of interaction is good	Liu Jiajing et al. [11]

Primary indicator	Secondary indicator	Tertiary indicator	Description of tertiary indicator	Reference source
Acceptability	Friendliness of service form	Service presentation form	Whether the overall interface layout, art style, font size, text and video typesetting, etc., make users feel comfortable	Liu Jiajing et al. [11]
Adaptability	App institutional-norm design	Formulation of normative documents	Whether normative documents such as user agreements and privacy policies have been formulated	Zhao Yimin et al. [28]
Adaptability	User feedback mechanism	Complaint and supervision channels	Whether channels for supervision and complaints have been established	Luo Juan [29]
Adaptability	User feedback mechanism	Channels for soliciting opinions and suggestions	Whether channels for soliciting opinions and proposals have been established	Luo Juan [29]

Primary indicator	Secondary indicator	Tertiary indicator	Description of tertiary indicator	Reference source
Adaptability	Personalization of service recommendations	User preference settings	Whether relevant digital cultural resources can be pushed according to preferences set by users	Xu Xukan et al. [23]
Adaptability	Personalization of service recommendations	User behavior analysis	Whether services can be recommended based on users' behavioral data	Xu Xukan et al. [23]

2.2 Verification of the Indicator System

This study used the Delphi method to verify the indicator system, inviting 10 senior experts in the field of public cultural services to participate. The expert group was drawn from well-known domestic universities and public cultural institutions, and all had 10 years, or even more than 20 years, of work experience in this field, with relatively high influence and authority. The investigation was conducted by sending expert consultation questionnaires. The questionnaire content covered the importance ratings of indicators at all levels—from the primary to the tertiary level—and included open-ended questions for experts to propose supplementary and revision suggestions for the indicators. Scoring adopted a five-point Likert scale, with the following scoring format: “very important” was assigned 5 points, “relatively important” 4 points, “generally important” 3 points, “not very important” 2 points, and “very unimportant” 1 point.

In this expert survey, all distributed expert questionnaires were validly returned, with a recovery rate of 100%. Through assignment and calculation of the recovered expert questionnaire data, it was found that the expert judgment-basis coefficient Ca and the expert familiarity coefficient Cs were both greater than 0.8, and the overall expert authority coefficient was 0.9, indicating a high level of expert authority in this consultation. At the same time, Kendall's coefficient of concordance W was greater than 0.4, and the coefficient of variation Cv for all indicators was less than 0.25, meaning that the indicators passed the consistency test. In addition, the mean importance values of the indicators were

all greater than 4, and the full-score rates were all greater than 20%, which indicates that the design of the indicators in this study is relatively scientific and that expert opinions were highly concentrated. Supported by the expert questionnaire data, the evaluation indicator system was ultimately established.

2.3 Weighting of the Indicator System

This study took the accessibility of the Public Culture Cloud App as the target layer, the primary and secondary indicators as the criterion layer, and the tertiary indicators as the scheme layer to establish a hierarchical structural model. To determine the weight of each layer of indicators relative to its upper-level indicator, this study, based on the mean importance scores of each indicator obtained through expert consultation, judged relative importance by calculating the mean differences among indicators, and conducted quantitative assignment with reference to Satty's 1-9 scale method. On this basis, indicators at the same level were compared pairwise to construct the corresponding judgment matrices. Subsequently, based on the judgment matrices, the eigenvector method was used to approximately calculate the weight vector of each layer of indicators relative to its directly upper-level indicator. Finally, the weights calculated at each level were synthesized layer by layer, ultimately obtaining the combined weight values of the scheme layer relative to the target layer and forming a complete weight-allocation result for the evaluation indicator system.

3 Evaluation Process and Results for the Accessibility of the Public Culture Cloud App

3.1 Selection of Evaluation Objects

As the core component of the public culture cloud, provincial-level Public Culture Cloud Apps are an important practice of local public culture cloud platforms constructed by relying on the National Public Culture Cloud. They have the distinctive positioning of "connecting upward with the nation and empowering the grassroots downward" and are a key node in the digital transformation of China's modern public cultural service system. They not only efficiently share cultural resources and seamlessly connect cultural services with the National Public Culture Cloud platform, but also fully integrate the province's cultural characteristics and service needs, providing more refined regional cultural elements and possessing typicality and representativeness.

This study planned to evaluate all existing provincial public cultural cloud Apps. The App search methods were as follows: first, investigate whether official websites provided App download channels; second, search on professional mobile-application search platforms using relevant search terms such as "province + public cultural cloud," "province + cultural cloud," and "province + public cultural service"; third, conduct supplementary searches in third-party market-

places. After manual screening, testing, and summarization, it was ultimately determined that 12 provincial public cultural cloud Apps met the requirements for investigation. Other provinces, autonomous regions, and municipalities were not included in the research scope because they had not developed public cultural cloud Apps, the Apps could not be downloaded or accessed, or the websites were under maintenance. At the same time, to make the attractiveness of promotional content and the frequency of content release horizontally comparable, WeChat official accounts opened by each provincial public cultural cloud and operated stably were selected as representative new-media platforms for comparative experiments, as shown in Table 2.

Table 2 Information on provincial public cultural cloud Apps and new-media platforms

Province (autonomous region, municipality)	App name	WeChat official-account platform
Hebei	Hebei Public Culture Cloud	Hebei Provincial Mass Art Center
Heilongjiang	Longjiang Public Culture Cloud	Heilongjiang Provincial Mass Art Center
Henan	People' s Culture Cloud	People' s Culture Cloud
Guangdong	Culture Guangdong	Culture Online—Guangdong Public Digital Culture Alliance
Gansu	Baicaoyuan	Gansu Provincial Cultural Center
Inner Mongolia	Inner Mongolia Culture Cloud	Inner Mongolia Culture Cloud
Tibet	Tibet Public Culture Cloud	Culture Tibet
Shanghai	Culture Cloud	Culture Cloud
Chongqing	Chongqing Mass Culture Cloud	Chongqing Municipal Mass Art Center
Beijing	Beijing Digital Cultural Center	Beijing Municipal Cultural Center
Hubei	Hubei Culture-and-Tourism Public Service Cloud	Hubei Provincial Mass Art Center
Yunnan	Cloud Culture Cloud	Yunnan Public Culture Cloud

3.2 Data Collection Method

This study collected evaluation data by combining qualitative and quantitative research. Some indicators obtained data through online investigation and App

surveys, such as human services, intelligent services, the coverage of publicity scope, the awareness level of publicity media, adjustability of user-adaptation modes, help systems, formulation of normative documents, complaint and supervision channels, channels for collecting opinions and suggestions, user preference settings, and user behavior analysis. The remaining indicators obtained data through user research. Because the user base of the Apps was insufficient, making it difficult to obtain adequate and representative user data through natural experience, it was more effective to collect user data by means of experiments. To reduce bias in the results and facilitate data aggregation and analysis, the response options for the indicator-scale questions adopted a five-point Likert scale.

3.3 Experimental Procedure

The experimental study began in December 2024 and adopted judgment sampling. The age level, gender, occupational background, and educational level of the experimental subjects were used as the sampling basis, and 138 participants were ultimately recruited to take part in the experiment. Scholars at home and abroad often set the sample size of users participating in experimental tasks within [5, 10][30-31]. To balance the sample characteristics of different provincial public cultural cloud Apps and ensure that each App had at least 10 participants, this study, due to practical constraints, mainly conducted the experiment through offline guidance or online communication. The experimental procedure was as follows:

- (1) Before the experiment, users used their own mobile devices (tablet computers/mobile phones) and downloaded and installed the corresponding provincial public cultural cloud App through the download link provided.
- (2) During the experiment, users used the provincial public cultural cloud App and browsed the corresponding new-media accounts according to the experimental procedure, completing the specified tasks: prepare the mobile device and data network required for the experiment; download and install the App, access it, and register or log in to an account; browse the overall layout, artistic style, font size, and column arrangement of the App interface; click through the navigation bar level by level to find the required resources; search through the search box to find the required resources; view and experience the App's interactive spaces, such as spaces for likes, reposts, comments, sharing, and communication; experience other service functions; browse content published by the new-media platform account.
- (3) After the experiment, users completed the questionnaire preset by the project team according to their real feelings. The experimental questionnaire was mainly divided into two parts: first, basic information; second, scoring of the evaluation items. All survey questions were closed-ended, with five-level options set according to the degree of conformity. At the

same time, after the experiment, some participants were selected for in-depth interviews, with the aim of further exploring their feelings and specific circumstances during use, so as to obtain more in-depth and detailed feedback.

3.4 Experimental Data Analysis

3.4.1 Descriptive Statistical Analysis A total of 138 valid user-survey samples were collected. Among them, the male-to-female ratio of the experimental subjects was 1:1, and there were corresponding numbers of samples in each age group, educational level, and occupational type, ensuring the reliability of the experimental results. Considering that this study is an exploratory study of the accessibility of public cultural cloud Apps, selecting a sample with relatively high homogeneity and high feedback quality (for example, people with graduate-level education) is more conducive to discovering potential problems in depth and with clarity, without being excessively disturbed by users' backgrounds. Some of the experimental subjects selected in this study were graduate students in fields related to public cultural services; therefore, the proportion of samples with a graduate degree or above was relatively high. The basic information of the experimental subjects is shown in Table 3.

Table 3 Statistics of users' basic information

Indicator	Characteristic	Count	Percentage/%
Gender	Male	69	50.0
Gender	Female	69	50.0
Age	Under 18	18	13.0
Age	18-30	73	52.9
Age	30-45	16	11.6
Age	45-60	21	15.2
Age	60 and above	10	7.3
Educational background	Junior middle school and below	15	10.9
Educational background	Senior high school	23	16.7
Educational background	Junior college	14	10.1
Educational background	Bachelor' s degree	34	24.6
Educational background	Graduate degree and above	52	37.7
Occupation	Student	66	47.8
Occupation	Enterprise employee	25	18.1

Indicator	Characteristic	Count	Percentage/%
Occupation	Staff member of a government agency or public institution	6	4.4
Occupation	Self-employed household	12	8.7
Occupation	Professional and technical personnel such as teachers and researchers	6	4.4
Occupation	Freelancer	10	7.2
Occupation	Unemployed / laid-off worker	4	2.9
Occupation	Retiree	7	5.1
Occupation	Other	2	1.4

3.4.2 Reliability and validity analysis

To evaluate the reliability and validity of the measurements, this study used SPSS 29.0 to conduct quantitative analysis of the questionnaire data. Reliability analysis aims to examine the consistency and stability of measurement results by calculating the internal consistency coefficient. The overall Cronbach' s α coefficient of the questionnaire was 0.921 ($\alpha > 0.90$) , significantly higher than the commonly accepted threshold (usually $\alpha > 0.70$ is acceptable, and $\alpha > 0.80$ is good) , indicating that the questionnaire has excellent internal consistency reliability and that the measurement results are stable and reliable.

Validity analysis focuses on assessing the extent to which the measurement can accurately reflect its intended construct. This study employed the KMO measure of sampling adequacy and Bartlett' s test of sphericity. The KMO statistic was 0.893, indicating good adequacy of the sample data. Bartlett' s test of sphericity was highly significant ($p < 0.001$) , showing that the questionnaire has a sufficient basis for convergent validity and discriminant validity.

3.5 Analysis of evaluation results

The formula for the comprehensive accessibility evaluation of public cultural cloud Apps is shown in Equation (1) :

$$T = \sum_{i=1}^n W_i \times S_i (i = 1, 2, \dots, n) \quad (1)$$

where T is the comprehensive accessibility score of the public cultural cloud

App, W_i is the weight of the i -th evaluation indicator, S_i is the score value of the i -th evaluation indicator, and n is the number of evaluation indicators; the scores of all indicators are accumulated to obtain the value of T .

From a qualitative perspective, the accessibility of public cultural cloud Apps is divided into five grades: excellent ($4.5 \leq T < 5$), good ($4 \leq T < 4.5$), medium ($3.5 \leq T < 4$), qualified ($3 \leq T < 3.5$), and poor ($T < 3$). According to the evaluation formula, a weighted average calculation was performed on the data for each indicator, and the final scores are shown in Table 4.

Table 4 Comprehensive accessibility scores of provincial public cultural cloud Apps

	Hebei	Heilongjiang	Henan	Hubei	Hubei	Chongqing	Beijing	Shanghai	Inner Mongolia	Gansu	Tibet	Guangdong	Total Evaluation
Mean score	3.23	3.43	3.38	3.16	3.23	3.11	3.45	3.06	2.81	3.02	3.47	3.08	3.20
Weighted score	3.26	3.45	3.41	3.44	3.53	3.20	3.66	3.26	3.01	3.26	3.60	3.21	3.36
													Qualified

As shown in Table 4, the overall score of provincial public cultural cloud Apps is 3.36, with an evaluation grade of “qualified,” indicating that the overall accessibility of provincial public cultural cloud Apps is currently at a basic level. The scores of provincial public cultural cloud Apps range from 3.01 to 3.66, falling between “qualified” and “medium.” Among them, the highest scores are, in order, Beijing, Tibet, and Hubei, which are evaluated as “medium”; the lowest score is for Inner Mongolia.

The weighted scores of the accessibility indicators for public cultural cloud Apps are shown in Table 5. Among them, the scores of the five first-level indicators are all between 3 and 4 points; their ranking is, in order, availability, acceptability, adaptability, approachability, and awareness. Availability and acceptability are evaluated as “medium,” while adaptability, approachability, and awareness are evaluated as “qualified.”

3.5.1 Public cultural cloud Apps score highest in availability

At present, network equipment has basically achieved full coverage of the public. A small number of groups, such as older adults constrained by digital literacy and operational ability, and adolescents restricted by online supervision, may still face certain limitations. Experimental feedback on the availability of service platforms shows that, in objective environments, except for the Apps in Chongqing and Inner Mongolia, where registration was not possible, all other provincial public cultural cloud Apps could be downloaded, installed, accessed,

and registered. Other situations encountered by a small number of users during the experiment were caused by limitations in their own conditions. In terms of the availability of service consultation, provincial public cultural cloud Apps that have not provided service consultation channels account for a relatively large proportion; only the public cultural clouds of Guangdong and Yunnan provide a single form of

manual service hotlines; at present, provincial Public Cultural Cloud apps have not yet developed intelligent service channels.

Table 5 Weights and Scores of Accessibility Indicators for Public Cultural Cloud Apps

First-level indicator	Weight/%	Weighted indicator score	Second-level indicator	Weight/%	Weighted indicator score	Third-level indicator	Weight/%	Score
Availability	20.64	3.78	Availability of device networks	1.74	4.31	Mobile devices	0.44	4.28
Availability	20.64	3.78	Availability of device networks	1.74	4.31	Data networks	1.30	4.32
Availability	20.64	3.78	Availability of service platforms	9.93	4.36	Download and installation channels	6.62	4.75
Availability	20.64	3.78	Availability of service platforms	9.93	4.36	System stability	3.31	3.58

First-level indicator	Weight/%	Weighted indicator score	Second-level indicator	Weight/%	Weighted indicator score	Third-level indicator	Weight/%	Score
Availability of digital cultural resources	20.64	3.78	Availability of digital cultural resources	6.64	3.71	Resource volume	1.34	3.57
Availability of digital cultural resources	20.64	3.78	Availability of digital cultural resources	6.64	3.71	Resource types	2.65	3.82
Availability of digital cultural resources	20.64	3.78	Availability of digital cultural resources	6.64	3.71	Resource forms	2.65	3.68
Availability of service consultation	20.64	3.78	Availability of service consultation	2.33	1.06	Manual service	0.58	1.25
Availability of service consultation	20.64	3.78	Availability of service consultation	2.33	1.06	Intelligent service	1.75	1.00

First-level indicator	Weight/%	Weighted indicator score	Second-level indicator	Weight/%	Weighted indicator score	Third-level indicator	Weight/%	Score
Awareness	36.84	3.17	Awareness of public publicity	18.42	3.66	Coverage of publicity scope	5.02	3.50
Awareness	36.84	3.17	Awareness of public publicity	18.42	3.66	Awareness of publicity media	3.32	5.00
Awareness	36.84	3.17	Awareness of public publicity	18.42	3.66	Attractiveness of publicity content	8.47	3.27
Awareness	36.84	3.17	Awareness of public publicity	18.42	3.66	Frequency of publicity content release	1.61	3.44
Awareness	36.84	3.17	App awareness	18.42	2.69	Users' awareness of the App brand	12.28	2.57
Awareness	36.84	3.17	App awareness	18.42	2.69	Users' awareness of App content	6.14	2.93

First-level indicator	Weight/%	Weighted indicator score	Second-level indicator	Weight/%	Weighted indicator score	Third-level indicator	Weight/%	Score
Approach 2014y	3.23		Barrier-free service participation	6.88	2.02	Understanding and usability of core functions	2.29	3.66
Approach 2014y	3.23		Barrier-free service participation	6.88	2.02	Adjustability of user-adaptive modes	3.62	1.25
Approach 2014y	3.23		Barrier-free service participation	6.88	2.02	Help system	0.97	1.00
Approach 2014y	3.23		Usability of the service system	13.76	3.83	Identifiability	2.26	3.92
Approach 2014y	3.23		Usability of the service system	13.76	3.83	Ease of access	7.41	3.78

First-level indicator	Weight/%	Weighted indicator score	Second-level indicator	Weight/%	Weighted indicator score	Third-level indicator	Weight/%	Score
Approachability	20.54	3.23	Usability of the service system	13.76	3.83	Ease of operation	4.09	3.86
Acceptability	10.94	3.62	User experience of service content	8.20	3.62	Users' perceived usefulness of service content	4.57	3.79
Acceptability	10.94	3.62	User experience of service content	8.20	3.62	Users' sense of immersion in using the service	1.00	3.49
Acceptability	10.94	3.62	User experience of service content	8.20	3.62	Users' willingness to continue use	2.63	3.38

First-level indicator	Weight/%	Weighted indicator score	Second-level indicator	Weight/%	Weighted indicator score	Third-level indicator	Weight/%	Score
Acceptability	10.94	3.62	Friendliness of service forms	2.74	3.63	Forms of user interaction	0.91	3.42
Acceptability	10.94	3.62	Friendliness of service forms	2.74	3.63	Forms of service presentation	1.83	3.73
Adaptability	10.94	3.27	Design of App institutional norms	4.37	4.60	Formulation of normative documents	4.37	4.60
Adaptability	10.94	3.27	User feedback mechanism	4.37	2.78	Complaint and supervision channels	1.46	1.67
Adaptability	10.94	3.27	User feedback mechanism	4.37	2.78	Channels for soliciting opinions and suggestions	2.91	3.33

First-level indicator	Weight/%	Weighted indicator score	Second-level indicator	Weight/%	Weighted indicator score	Third-level indicator	Weight/%	Score
Adaptability	0.94	3.27	Personalized service recommendations	0.20	1.58	User preference settings	1.65	1.33
Adaptability	0.94	3.27	Personalized service recommendations	0.20	1.58	User behavior analysis	0.55	2.33

3.5.2 Public Cultural Cloud App awareness received the lowest evaluation

In terms of public publicity, media awareness is relatively high. The official new-media platforms that have been established—such as Weibo, WeChat, Douyin, Kuaishou, Xiaohongshu, CCTV Video, and Xuexi Qiangguo—have broad audiences and large numbers of potential users. The scores for the coverage of publicity scope and the frequency of publicity content release are in the middle range, but there are differences among provinces: the provincial Public Cultural Cloud apps of Beijing, Gansu, and Yunnan [[unclear: sentence continues]].

...have achieved relatively broad cross-platform dissemination, being present on six or more new-media platforms, whereas Heilongjiang and Inner Mongolia have chosen only a single new-media channel for information release. In addition, the frequency with which the same provincial Public Culture Cloud updates content across different platforms also shows obvious imbalance, reflecting differentiated characteristics in operational strategies and resource allocation. The attractiveness score for publicity content is relatively low, mainly because of a possible lack of innovation in both content and form and insufficient targeting of platform audiences, resulting in potential users not being effectively developed.

The awareness of the Public Culture Cloud App is mainly determined by the knowability of its public publicity; recognition of the App brand and content is a direct reflection of the effectiveness of its public publicity. At present, Public Culture Cloud faces the problem of insufficient efficiency in converting target

audiences, with an imbalance between investment in public publicity and the actual conversion effect among users.

3.5.3 The Public Culture Cloud App has relatively low approachability

As a relatively important first-level indicator, approachability scores comparatively low among the first-level indicators. Among them, barrier-free service participation is the basic indicator of approachability, while the usability of the service system is the key indicator of approachability. Usability indicators such as identifiability, operability, and accessibility score 3.92, 3.86, and 3.78 respectively, showing relatively balanced results. This indicates that the maturity of the App service system's technical infrastructure meets the industry benchmark level, but many details still leave room for optimization.

In terms of barrier-free service participation, the understandability and usability of core functions score relatively high, at 3.66. In its design, the Public Culture Cloud App takes into account differences in the public's cultural cognition level and digital capabilities, adheres to a user-centered approach, and effectively reduces barriers to technology use. However, scores are very low for the setting of user-adaptive modes and help systems; most Apps have not yet developed complete user-adaptive modes and supporting help systems.

3.5.4 The Public Culture Cloud App has relatively high acceptability

Among the acceptability indicators, the user experience of service content and the friendliness of service forms receive similar scores. In terms of the user experience of service content, users' perceived usefulness receives a medium score, while users' immersion in service use and willingness to continue using the service are at a qualified level. After learning about Public Culture Cloud content, users generally recognize its value in improving knowledge and skills or meeting cultural needs. However, users from different groups and with different needs subjectively classify the usefulness of service content at different levels. Meanwhile, in the process of real-time service interaction, the degree of cognitive immersion generated by multimodal sensory stimulation and real-time feedback mechanisms, as well as users' willingness to continue using the service based on their overall experience, still need to be further strengthened.

In terms of the friendliness of service forms, the form of service presentation scores relatively high. Multimodal content combinations reduce users' cognitive load to a certain extent and strengthen the intuitive communication of service value, but many details in the design still leave room for optimization. The score for user interaction forms is relatively low. At present, the user interaction mechanisms of Public Culture Cloud Apps are monotonous in form and lack sufficient interaction triggers, making it difficult to effectively stimulate the initiative and continuity of user-generated content.

3.5.5 The Public Culture Cloud App has moderate adaptability

In terms of App institutional and normative design, the third-level indicator for the

formulation of normative documents scores relatively high, at 4.60. Since the Public Culture Cloud App is led and developed by the government, the formulation of normative documents is generally subject to strict control. However, the Public Culture Cloud Apps of Hebei and Inner Mongolia have problems such as relatively brief descriptions of user agreements and privacy policies, or insufficient information disclosure. In terms of user feedback mechanisms, the score for channels for collecting opinions and suggestions is relatively high, but the score for complaint and supervision channels is low, at only 1.67. At present, the Public Culture Cloud Apps of Tibet and Hubei have not established user feedback mechanisms. Most other provincial Public Culture Cloud Apps have only opened simple feedback channels; they have not refined the functional divisions of the feedback mechanism, and have neglected necessary feedback-function divisions such as complaint and supervision channels. In terms of personalized service recommendation, the score for user behavior analysis is low, and the score for user preference settings is extremely low, at 1.33. At present, among provincial Public Culture Cloud Apps, only Hebei, Tibet, Heilongjiang, and Henan have developed personalized service recommendation functions based on user preference settings or user behavior analysis.

At present, China's Public Culture Cloud services are still in an exploratory stage of systematic construction and development. Provincial Public Culture Cloud platforms tend to be unified in their overall architecture, showing standardized and patterned characteristics in their functional layouts. However, existing construction achievements still suffer from the problem of "form outweighing function." Although some functional modules have been established, their actual content is relatively scarce, or even blank; some functions also have limited practical utility, showing a phenomenon of nominal or hollowed-out functions. At present, the App has already met the requirements of basic functional construction, but there remain obvious deficiencies in refined services, improvement of auxiliary functions, personalized service recommendation, and the integrated application of advanced technologies. How to further deepen the functional construction of the Public Culture Cloud App and promote its transformation from a simple resource-display platform into a service carrier with sustained user-reach capability has become a core issue urgently needing resolution in the current development of Public Culture Cloud.

4 Suggestions for improving the accessibility of the Public Culture Cloud App

Improving the accessibility level of the Public Culture Cloud App is an important aspect of strengthening the public's sense of benefit from public digital cultural services. Based on an in-depth analysis of the relevant results obtained in this study, recommendations are proposed from the following five aspects.

4.1 Expand diversified acquisition channels and improve availability

4.1.1 Optimize application download channels and expand coverage

The coverage of App acquisition channels is the foundation for ensuring service availability. The investigation found that the official websites of provincial Public Culture Clouds generally have problems such as not providing App download links and application versions not having...

updates, inability to register after scanning a QR code to download, risk warnings during installation, or installation failures. Therefore, provincial public culture cloud apps should ensure full coverage in app stores such as Apple, Huawei, and Xiaomi, so as to resolve the basic problem of missing download entry points. For app stores of other manufacturers, low-cost and lightweight listing strategies may be adopted to reduce technical adaptation and operating costs. In addition, mainstream app-store optimization (ASO) can be strengthened by optimizing keywords and upgrading visual materials, thereby increasing the app's visibility. Public culture cloud apps should work with official websites, mini programs, and new media platforms to provide guidance links for app downloads; at the same time, corresponding government-service platforms should be used to provide app download guidance, increase app exposure, and ensure the security and validity of download links.

4.1.2 Expanding “AI + Human” Service Consultation Channels When users encounter problems while using a public culture cloud app, if effective official consultation and assistance channels are lacking, their needs cannot be met in a timely manner, resulting in a lack of support during the service interaction process. Traditional human customer-service models incur relatively high labor costs, cannot provide real-time responses around the clock, and have limited service efficiency. An “AI + human” collaborative model can be applied, taking into account the platform's public-interest nature, inclusiveness, and limited resources, to build a tiered service model of “AI-led, human-assisted” support. First, by strengthening the intelligent Q&A engine, high-frequency needs can be intercepted at the front end and handled through self-service. For complex situations that AI cannot handle, the system automatically generates a work order and indicates the expected follow-up response time; users may choose to schedule a manual callback or leave their contact information and questions, after which customer-service staff proactively contact them by priority during service hours, forming a “non-real-time but guaranteed” service loop. Second, users can evaluate responses through service feedback, continuously optimizing the AI knowledge base. At the same time, a knowledge co-construction mechanism should be established, whereby institutional staff synchronously update information such as policies and activities to ensure the timeliness of information updates.

4.2 Comprehensive Information Dissemination to Enhance Awareness

4.2.1 Deploying a New Media Matrix At present, with their enormous user bases and extensive communication effects, new media platforms have become important carriers of information dissemination. Weibo, Douyin, Xiaohongshu, WeChat public accounts, WeChat Channels, and Kuaishou are all typical applications. Public culture cloud apps should make full use of the advantages of new media platforms to build a new media matrix and increase public awareness of themselves. By opening accounts on different new media platforms and continuously cultivating high-quality, high-traffic accounts, they can provide sustained traffic for public culture cloud apps. Public culture cloud services should match the cultural needs of different groups and create attractive content: for example, using “China-chic” short videos to break cultural boundaries and attract Generation Z; using edutainment-oriented interactive activities for parent-child families; providing in-depth art and aesthetics content for urban white-collar workers; and creating digital classics such as opera and traditional Chinese studies for older adults. The official website of a public culture cloud should systematically integrate and visually present its new media matrix. Drawing on the construction experience of the National Public Culture Cloud, it may adopt a structured combination of “platform name + visual identity + redirect link,” and use a unified and standardized visual layout to centrally display and channel traffic to the various new media platform accounts already established within the province, further improving user awareness.

4.2.2 Unifying Brand Development As a comprehensive public digital culture service platform, the core content of the public culture cloud is to integrate digitized resource services from various public cultural institutions. At present, however, some public culture clouds have not been clearly defined or effectively distinguished from vertical-domain digital platforms such as cultural centers and mass art centers. Problems such as overlapping names, similar functional divisions, and duplicated content exist, revealing unclear vertical hierarchical relationships among platforms, homogenized horizontal functional positioning, and a lack of unified standards for brand naming. The brand development of public culture clouds should unify brand names and brand positioning, eliminate fragmented brand cognition caused by multiple derivative platforms, consolidate brand identity, and, through unified service standards for public culture clouds, embed in public cognition the three core values of official authority endorsed by the state, comprehensiveness of service, and inclusiveness of service.

4.3 Optimizing Interfaces and Services to Improve Accessibility

4.3.1 Enhancing Barrier-Free Participation in Services The inclusiveness of public cultural services emphasizes universal applicability and fairness for service recipients, ensuring that the broad masses of the people can share in the achievements of public digital cultural service development. Public culture cloud apps need to fully consider differences among service recipients in

age level, educational attainment, and other respects, helping different groups bridge the invisible digital divide that exists in society and providing service models adapted to different populations. For example, a care mode can be set up for older adults, supporting font-size adjustment and interface simplification to facilitate operation and browsing; for people with hearing or visual impairments, functions such as voice-text mutual conversion and screen reading can be provided. At the same time, a help system that assists users in using the app should be equipped, providing corresponding introductions and usage guidance so as to maximize users' effective use of public culture cloud apps.

4.3.2 Improving the Usability of Service Systems The construction of public culture clouds mainly relies on government financial investment and is constrained by budget scale and allocation mechanisms, facing limitations in technology, talent, funding, and other areas. In the construction of public culture cloud apps, detailed problems exist, such as unclear navigation definitions, inconsistent modes of operation, imprecise search, and insufficiently prominent image subjects. To systematically improve usage effectiveness, efforts must be made to optimize content recognizability, functional zoning, and content hierarchy. Specifically, consistency of content should be strengthened through semantically precise multimodal expression; the functional architecture should be optimized through standardized operational logic and a clarified navigation structure; a multi-level classification system should be built to achieve precise resource retrieval; an orderly content matrix should be formed by relying on recommendations of related content, with core elements highlighted in both macro-level information architecture and micro-level content expression; and overall professionalism and attractiveness should be enhanced through branding and localized operation.

4.4 Aligning with User Needs and Ensuring Acceptability

4.4.1 Enhancing the Sense of Interaction among Users With regard to the sense of interaction among users, the user-interaction forms currently provided by the App are mainly limited to basic functions such as liking, bookmarking, and commenting. Low-frequency characteristics in user interaction behavior are prominent, and overall activity is not high. Therefore, the Public Culture Cloud App should enrich forms of user interaction, expand innovative spaces for user interaction, and create an "online + offline" linkage model: offline, long-term joint activities can be carried out through cultural venues, universities, and communities, with cultural check-in tasks set up to guide online participation; online activities can warm up offline events through registration and reservation, live-streaming interaction, topic fermentation, and other forms. Meanwhile, diverse interactive forms such as community Q&A, immersive cultural experiences, and gamified reward mechanisms can be expanded to enhance users' sense of participation.

4.4.2 Optimizing Service Presentation Forms Interface aesthetic design affects users' visual experience. At present, there are shortcomings in the design layout, visual quality, information density, and element complexity, which influence users' perception. It is recommended to carry out systematic optimization from the following aspects: first, unify the visual order and optimize the layout. By establishing a grid system and visual standards, ensure that element arrangement is orderly and styles are consistent; construct a clear visual hierarchy according to the content logic; and reasonably arrange space and information density. Second, improve the quality and focus of visual elements. Select high-definition, high-quality materials to ensure clear information transmission, and focus on core content by streamlining redundant design elements, thereby achieving a visual effect that is concise yet complete.

4.5 Flexibly Adapting to Changes in Needs and Improving Adaptability

4.5.1 Customizing Personalized Content The Public Culture Cloud App should be guided by “preferences + needs” in its development so as to achieve effective service push. At present, the Public Culture Cloud App lacks a precise reach mechanism based on differences in user needs, which increases the cost for users to obtain information. To optimize the efficiency of information distribution, an intelligent push system based on big data can be constructed: on the one hand, support users in actively tagging their interests, recommend resource services according to user preferences, and achieve explicit preference matching; on the other hand, deepen the mining and analysis of multi-source heterogeneous data such as users' historical browsing, content bookmarking, and interactive behaviors. Through machine-learning algorithms, predict user interests and gain an in-depth understanding of user needs, ultimately realizing personalized, precise, and stratified content push and reducing the burden on users in acquiring information.

4.5.2 Handling User Feedback User feedback channels can provide first-hand information on user needs and realize public participation and co-construction. The Public Culture Cloud App should refine necessary feedback channels such as supervision and complaints, opinions, and suggestions, and clearly define responsibilities across different sections. In response to different feedback needs, innovative forms of feedback may be added: in the opinions and suggestions channel, a “user suggestion co-governance community” can be created, with a public suggestion-collection area, a “golden idea” points reward mechanism, and regular disclosure of adopted suggestions and improvement results to encourage citizen participation; in the complaints and supervision channel, a feedback-progress visualization system can be applied, providing dedicated query IDs and real-time status-update modules, and demonstrating transparency and efficiency in processing through time estimates and node-based push notifications.

5 Conclusion

The construction and evaluation research of the accessibility evaluation indicator system for the Public Culture Cloud App is of great significance for improving the level of digital cultural development and perfecting the public cultural service system. By constructing a scientific and reasonable evaluation indicator system, this study can not only comprehensively reflect the actual operation of the Public Culture Cloud App, but also provide strong decision-making support for government departments and relevant institutions. On the basis of the existing framework for evaluating the accessibility of public digital cultural services, this study constructs an accessibility evaluation indicator system in light of the characteristics of the Public Culture Cloud App, further refining the application system and scenarios for evaluating the accessibility of public digital cultural services. It also conducts research on provincial-level Apps nationwide, providing a reference for improving local public digital cultural service systems in China. Subsequent research may expand the scope of research objects, extend the administrative level of Public Culture Cloud Apps, and improve sample data for the experimental population. In addition, as technologies are upgraded and public needs change, the evaluation indicator system should be further improved, data collection and processing should be optimized, and the accuracy and reliability of evaluation results should be enhanced.

References

- [1] Liu Wenyan, Wanyan Dengdeng, Dai Yanqing. A survey on the current accessibility of public digital cultural services in China[J]. *Journal of the National Library of China*, 2023(2): 70-80.
- [2] Wang Zijian. The practical status and prospects of using Apps to carry out public cultural services: An investigation and analysis based on 766 Apps in 724 cities[J]. *Library Theory and Practice*, 2021(1): 6-13.
- [3] Wei Jingzhu, Li Shuainan. Research on the operational efficiency of public culture cloud platforms based on the DEA model[J]. *Information and Documentation Services*, 2020(4): 22-29.
- [4] Wang Miao, Jing Yuan. Research on the construction of a smart public cultural service cloud platform[J]. *Digital Library Forum*, 2019(2): 43-50.
- [5] Wu Hao. Practice and reflection on a one-stop public digital cultural service cloud platform: Taking the construction of the “Guangdong Culture E Station” as an example[J]. *Journal of Library Science*, 2019(6): 114-118.
- [6] Wu Dan, Lin Hui. Research on the cognitive load of multimodal public digital cultural resources based on EEG spectra: Taking the National Public Culture Cloud as an example[J]. *Information Science*, 2024(7): 146-157.
- [7] Li Wenchuan, Chen Cheng, Hu Yawen. Research on innovation in public digital culture cloud resource services[J]. *Library*, 2017(2): 18-23.

- [8] He Wenjin, Wang Zhanping, Tan Chunhui. Analysis of user needs and platform optimization of public culture cloud platforms from the perspective of the Kano model[J]. *Information Science*, 2024(8): 184-192.
- [9] Wei Jingzhu, Cao Huizi, Zhang Lele. Research on user needs for Public Culture Cloud activities based on online comments[J]. *Library and Information Service*, 2022(9): 66-73.
- [10] Zhu Weizhu. Analysis of user experience evaluation and service innovation strategies for cultural cloud platforms[J]. *New Century Library*, 2021(11): 73-81.
- [11] Liu Jiajing, Kuang Li, Pan Jie, et al. Research on provincial Public Culture Cloud WeChat users' continuance intention[J]. *Library Journal*, 2022(7): 47-57.
- [12] Hou Xueyan, Hu Yulu. Research on the connotation expansion and path optimization of Public Culture Cloud services from the perspective of digital governance[J]. *Library*, 2023(10): 7-15.
- [13] Chen Zeqian, Yu Xiaotong, Zheng Najing, et al. Construction and Application of Evaluation Indicators for Public Culture Cloud Services[J]. *Documentation, Information & Knowledge*, 2020(6): 54-66.
- [14] Liu Liyun, Liu Xiaochuan. Construction and Research on an Efficiency Evaluation System for Shandong Public Culture Cloud Services[J]. *Library Work in Colleges and Universities*, 2024(2): 58-65.
- [15] An Qi. Research on Service Performance Evaluation of Public Culture Cloud Platforms[D]. Zhengzhou: Zhengzhou University, 2021.
- [16] Yan Beini, Liu Wan. Research on the Core Elements of Regional Public Culture Cloud Services in the Yangtze River Delta[J]. *Research on Library Science*, 2023(2): 54-66.
- [17] Pechansky R, Thomas J W. The Concept of Access: Definition and Relationship to Consumer Satisfaction[J]. *Medical Care*, 1981(2): 127-140.
- [18] Tomasevski K. Manual on Rights-Based Education: Global Human Rights Requirements Made Simple[R]. Bangkok: UNESCO Bangkok, 2004: 7-9.
- [19] Wang Qian, Wu Licai. Research on the Accessibility Evaluation of Public Cultural Services: Experience Reference and Framework Construction[J]. *Journal of Shanghai Administration Institute*, 2015(3): 53-59.
- [20] Wang Qian. Research on the "Accessibility" Evaluation of Farmhouse Library Services[J]. *Library Development*, 2015(4): 34-38.
- [21] Dai Yanqing, Hu Yifu. Research on the Accessibility Elements of Public Digital Cultural Services[J]. *Library and Information Service*, 2022(16): 57-68.
- [22] Peters D H, Garg A, Bloom G, et al. Poverty and Access to Health Care in Developing Countries[J]. *Annals of the New York Academy of Sciences*, 2008(1): 161-171.

- [23] Xu Xukan, Hua Shizhen. Evaluation of Government Apps in the Context of “Internet + Government Services” : Based on the Intuitionistic Fuzzy Analytic Hierarchy Process[J]. Journal of Intelligence, 2020(3): 198-207.
- [24] Feng Xian, Li Jin. Accessibility of Rural Public Cultural Services: Indicator System Design and Evaluation Application[J]. Library, 2020(11): 20-26, 32.
- [25] Wang Meng, Xu Lei, Sun Honglei. Research on Gamification Design of Public Culture Cloud Platforms: Taking the National Public Culture Cloud as an Example[J]. Library and Information Service, 2023(21): 73-88.
- [26] Si Xinli. Accessibility of Urban Grassroots Library Services: Analytical Framework, Survey Evaluation, and Improvement Paths[J]. Library and Information Service, 2024(21): 70-78.
- [27] Standardization Administration of China. Information Technology—Technical Requirements for Application Software (App) of Intelligent Mobile Terminals: GB/T 37729—2019[S]. Beijing: Standards Press of China, 2020.
- [28] Zhao Yimin, Li Xuelian, Han Yingying. Research on the Accessibility of Public Cultural Services: American Experience[J]. Library Development, 2021(1): 140-146.
- [29] Luo Juan. Process-Oriented Logic: The Realization Mechanism of Rural Public Cultural Service Accessibility in the Context of Digital Rural Construction[J]. Rural Economy, 2022(10): 82-90.
- [30] Wang Yingxue. Research on User Experience Evaluation of Culture-Tourism Integrated Services on Public Digital Culture Platforms[D]. Baoding: Hebei University, 2021.
- [31] Cai Ping. Research on Usability Evaluation of Information Architecture of University Library Websites: Taking the University of Cape Town Library as an Example[J]. Journal of Intelligence, 2011(5): 169-173.

Public Culture Cloud App Accessibility Evaluation Based on Multi-source Data

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Abstract Enhancing the accessibility of public culture cloud Apps is a strategic path for promoting the high-quality development of public digital cultural services and cultural inclusiveness. This study constructs an accessibility evaluation indicator system for public culture cloud Apps. The indicator system and indicator weights are verified and determined through expert consultation and the Analytic Hierarchy Process. Taking provincial-level public culture cloud

Apps as the evaluation objects, the research comprehensively employs multi-source data collection methods, such as online surveys, platform investigation, and experimental methods, to obtain subjective and objective evaluation data. The overall evaluation score is 3.36, which is at a “pass” level. The scores of the five dimensions all range between 3 and 4. Accordingly, targeted suggestions are proposed for the collaborative optimization of each dimension, with the aim of refining the path for enhancing the accessibility of the public digital cultural service system.

Keywords Public culture cloud; App; Multi-source data; Accessibility; Evaluation indicator

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv. Machine translation. Verify with the original.