Research on the Construction of an Evaluation Index System for Literature Resource Guarantee Levels in Chinese Universities under the "Double First-Class" Initiative: Postprint

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Date: 2023-04-01T15:51:24+00:00

Abstract

[Purpose/Significance] In the context of "Double First-Class" construction, evaluating the literature resource guarantee level of universities is essential for enhancing their teaching and research capabilities. This study constructs an evaluation index system by analyzing the participating entities and specific processes involved in literature resource guarantee work for first-class disciplines, thereby providing references for improving literature resource guarantee levels in universities. [Method/Process] A hierarchical structure model of evaluation indices is established from three dimensions: literature resource construction, literature resource utilization, and user satisfaction regarding first-class disciplines. The AHP-CRITIC model is employed for combined weighting of the evaluation indices. An empirical study is subsequently conducted on seven "Double First-Class" construction universities in Hubei Province. [Results/Conclusion] The study constructs a "Double First-Class" university literature resource guarantee level evaluation index system comprising three first-level indices and nine second-level indices. Through empirical analysis of existing problems in literature resource guarantee work in Chinese universities, relevant recommendations are proposed.

Full Text

Research on the Construction of an Evaluation Index System for Document Resource Guarantee Levels in Chinese Universities from the Perspective of "Double First-Class" Construction

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Abstract: [Purpose/Significance] From the perspective of "Double First-Class" construction, the evaluation of university document resource guarantee levels is crucial for enhancing teaching and research standards. By analyzing the participating subjects and specific guarantee processes of document resource support for first-class disciplines in universities, this study constructs an evaluation index system to provide references for improving university document resource guarantee levels. [Method/Process] This paper establishes an evaluation index hierarchy model from three dimensions: document resource construction, document resource utilization, and user satisfaction for first-class disciplines. The AHP-CRITIC model is employed for combined weighting of evaluation indicators. Finally, an empirical study is conducted on seven "Double First-Class" universities in Hubei Province. [Result/Conclusion] An evaluation index system for document resource guarantee levels in "Double First-Class" universities is constructed, comprising three primary indicators and nine secondary indicators. Through empirical analysis, this paper identifies existing problems in current university document resource guarantee work in China and proposes relevant recommendations.

Keywords: AHP-CRITIC; Document Resource Guarantee; Evaluation Index System; "Double First-Class" Construction **Classification Number:** G250 **DOI:** 10.13266/j.issn.0252-3116.2022.07.006

On October 24, 2015, the State Council issued the "Overall Plan for Coordinating the Construction of World-Class Universities and First-Class Disciplines" [1]. According to this plan, China will build "Double First-Class" universities from a national strategic perspective as the goal for future higher education reform and development. The overall objective of document guarantee is to maximally satisfy users' most extensive needs for documents [2]. University document resource guarantee levels are important indicators for measuring teaching and research standards. High-level document resource guarantee work can meet the document needs of faculty and students in learning and research, promote the optimization of teaching resources and scientific research output, and ensure continuous progress in university teaching and research. Against the backdrop of "Double First-Class" construction, how to comprehensively evaluate, enhance, and optimize the document resource guarantee levels for first-class disciplines has become an urgent issue for university libraries to address. Existing research evaluations often reflect document resource guarantee levels from a single stake-

holder perspective, frequently adopt single index system construction methods, and many studies fail to complete applied empirical validation of the constructed evaluation systems, resulting in a lack of scientific rigor and reasonableness in evaluation results.

This paper examines two types of participants involved in document resource guarantee for first-class disciplines—university libraries and their users—and constructs an evaluation index system from three dimensions: document resource construction, document resource utilization, and user satisfaction. Based on the AHP-CRITIC model, combined weighting is applied to evaluation indicators. Taking seven "Double First-Class" universities in Hubei Province as research subjects, we conduct empirical evaluation and analysis of document resource guarantee levels for first-class disciplines and propose optimization recommendations to provide support for continuously improving university document resource guarantee levels.

Related Research

Research on evaluating university library document resource guarantee levels has undergone transformations in three aspects: evaluation perspective, evaluation object, and evaluation method. Specifically, regarding evaluation perspectives, early library evaluation research often focused on collection resources as the center. In recent years, to overcome the limitations of collection-centered approaches, many scholars have explored user-centered evaluation methods. Jin Shengyong et al. were among the first to incorporate document resource construction and user services as parallel evaluation dimensions within library assessment frameworks [3]. Subsequently, related research on library document guarantee level evaluation increasingly combined these two aspects. Building upon mature research on digital resource guarantee level evaluation, scholars have moved beyond library-centered perspectives to explore user-centered approaches based on user satisfaction and user experience models to enhance the scientificity and convenience of existing evaluation methods [4-5]. Concurrently, scholars have shifted toward constructing comprehensive evaluation systems that combine qualitative and quantitative approaches for specific types of institutions, specific disciplines, and specific construction needs [6-9].

Regarding evaluation objects, document resource guarantee level evaluation research has transitioned from evaluating print collections to digital resources, and then to comprehensive evaluation of hybrid guarantee models for both print and digital documents. Evaluation objects have also become increasingly refined, shifting from broad assessments of university libraries to evaluations of specific disciplines and institutions with specific construction requirements. Early library evaluation research focused on print collections. As digital resources have played increasingly important roles in document guarantee, scholars have conducted research on digital resource guarantee level evaluation based on the specific characteristics that distinguish digital from print resources. Xiao Long et al. constructed an electronic resource evaluation index system from the di-

mensions involved in library electronic resource construction [10], while Suo Chuanjun et al. studied the evaluation of digital collection quality and service performance [11-12]. Wu Jianhua categorized relevant indicators for document guarantee level evaluation into two types: those expressing document resource construction intensity and those expressing effectiveness, noting that indicators expressing construction scale are relatively easy to measure while those expressing quality are difficult to obtain [8, 13]. Regarding indicators such as guarantee rate and satisfaction rate that can intuitively reflect the degree of user need fulfillment but are difficult to measure, Wu Shufen and Li Linlin simplified their acquisition process through user-oriented questionnaires [5-6], while Sui Guiling et al. and Wang Chunlei et al. approximated document guarantee rates and user need satisfaction rates by calculating the proportion of core journals in library collections [7-8].

Regarding evaluation methods, there has been a shift from quantitative or qualitative evaluation to comprehensive evaluation combining both approaches. In terms of weighting methods for evaluation index systems, there are three main approaches: subjective weighting, objective weighting, and combined subjective-objective weighting. Current research on document resource guarantee levels primarily employs subjective weighting methods. Bian Fuquan et al. weighted indicators based on work experience and institutional discipline construction needs [14], while Du Zhanjiang et al. and Wu Shufen used the Delphi method to synthesize expert opinions combined with Analytic Hierarchy Process and fuzzy comprehensive evaluation for indicator weighting [5, 16].

Regarding comprehensive evaluation index system construction methods, the Analytic Hierarchy Process (AHP) proposed by T.L. Saaty in the 1970s is a subjective weighting method that can scale people's subjective judgments and achieve quantitative-qualitative integration [16-17]. The CRITIC (Criteria Importance Through Intercriteria Correlation) method is an objective weighting approach that determines indicator weights through contrast intensity and conflict between indicators [18]. Subjective weighting methods emphasize reflecting expert opinions, while objective weighting methods emphasize reflecting actual indicator data information [19]. For complex system problems, combining weighting results from different methods in a certain way can reduce bias from single weighting methods, such as using the AHP-CRITIC model to combine weighting results from AHP and CRITIC. Regarding combination approaches, Li Gang et al. demonstrated that the subjective-objective weight combination method based on range maximization has certain rationality and can effectively distinguish evaluation objects [19].

In summary, existing research has continuously improved evaluation effectiveness by transforming evaluation perspectives, subdividing evaluation objects, optimizing evaluation indicators, and establishing comprehensive evaluation systems combining qualitative and quantitative approaches. However, current research perspectives mainly fall into two categories: collection-centered and user-centered. In terms of weighting method selection, single subjective weighting

methods are primarily adopted. This paper argues that using only single subjective or objective methods for indicator screening and weighting cannot avoid problems where multiple indicators reflect similar information or where indicator weights deviate from practical experience, and single perspectives cannot comprehensively reflect actual situations. To address these issues, this paper completes three main tasks: First, in broadening evaluation perspectives, it evaluates from three aspects involving two types of participants—first-class discipline document resource construction, utilization, and user satisfaction—to obtain more comprehensive evaluation information. Second, in constructing the evaluation system, it employs the AHP-CRITIC model to screen indicators reflecting similar information and combine subjective-objective weighting results, reducing bias from single weighting methods to obtain more scientific and reasonable evaluation results. Third, in applying the evaluation system, it applies the constructed evaluation index system to assess current document resource guarantee levels for first-class disciplines, analyzes existing problems, and provides relevant recommendations.

Methodology for Constructing the Evaluation Index System for First-Class Discipline Document Resource Guarantee Levels

This paper obtains data required for evaluation index system construction through the Delphi method, literature research, and sampling surveys. Based on the AHP-CRITIC model, combined weighting is applied to evaluation indicators to construct a reasonable and effective evaluation index system for assessing university first-class discipline document resource guarantee levels [20].

3.1 Construction Approach for the Evaluation Index System

The AHP-CRITIC model combines weighting results from AHP and CRITIC based on the principle of range maximization to avoid significant bias from single weighting methods, enabling the evaluation index system to reflect both expert subjective opinions and adapt to objective development realities. The construction approach in this paper is divided into two steps: constructing the evaluation index hierarchy structure and weighting evaluation indicators, as shown in Figure 1 [Figure 1: see original paper].

3.2 Calculation Methods for the Evaluation Index System

3.2.1 Construction of the Evaluation Index Hierarchy Model Constructing the evaluation index hierarchy model requires decomposing the evaluation target layer by layer to ensure indicators at each level comprehensively describe the content of the upper level. This paper takes university document resource guarantee level evaluation as the target layer, establishes examination dimensions involved in target realization as the criterion layer, and selects indi-

cators through literature research and sampling surveys to screen specific evaluation indicators for each criterion layer, forming the indicator layer.

Based on the constructed evaluation index hierarchy model, to achieve objective and reasonable evaluation of each university's document resource guarantee level by the evaluation index system, reasonable allocation of indicator weights is also required. Next, indicator weights in the evaluation index system are calculated.

3.2.2 Calculation of Indicator Weights for the Evaluation Index System The approach for calculating indicator weights involves: first using AHP and CRITIC to calculate subjective and objective weights separately; then combining these through an optimization model with range maximization as the objective to establish final indicator weights.

(1) Subjective Weight Calculation Based on AHP. AHP-derived weights reflect experts' subjective judgments on indicator importance and are suitable for handling complex problems with multiple objectives and levels. Therefore, this paper uses AHP to reflect expert subjective opinions. First, questionnaires are distributed to experts to construct pairwise comparison judgment matrices [16]. The maximum eigenvector λmax of the weight vector is calculated for consistency testing. The consistency index C.I. and consistency ratio C.R. are calculated as shown in Formula (1). When the resulting C.R. values are all less than 0.1, consistency requirements are met and the corresponding eigenvectors are valid. Otherwise, expert opinions must be recollected until consistency tests are passed.

After passing consistency tests, the normalized relative importance vectors of each indicator to upper-level indicators, denoted as w^(1)0_j, are calculated using Formulas (2) and (3), where α_{ij} represents the expert comprehensive score value for indicator j in judgment matrix i.

Formula (1): C.I. = (λ_{max} - n) / (n - 1) C.R. = C.I. / R.I.

Formula (2): w^(1)0_j = (product of elements in row j)^(1/n) / sum of all (product of elements in row i)^(1/n)

Formula (3): w^(1) = normalized weight vector

Through this process, subjective weighting results reflecting expert opinions are obtained. However, AHP cannot effectively avoid expert subjective preferences and ignores development realities. Therefore, objective weights are calculated through actual data.

(2) Objective Weight Calculation Based on CRITIC. CRITIC-calculated indicator weights can reflect the amount of information contained in indicators, enabling more accurate weight determination [18]. Therefore, this paper uses CRITIC to calculate objective weights for evaluation indicators. First, the information content contained in m evaluation indicators is calculated. CRITIC reflects information content through contrast intensity between indicators and

conflict reflecting indicator correlation, as shown in Formula (4) for the information content of indicator i. Objective weights are then determined based on calculated information content, as shown in Formula (5), where σ_i represents the standard deviation of indicator i and γ_i represents the pairwise correlation coefficient between indicator i and other indicators.

Formula (4): C_i = σi * *sum(1 - /*γ{ij}|) for j=1 to m

Formula (5): w_i^(2) = C_i / sum(C_j) for j=1 to m

This yields objective weighting results consistent with actual conditions. However, CRITIC has significant errors when weighting indicators that are difficult to quantify. Therefore, a range maximization optimization model is constructed to combine AHP and CRITIC weighting results.

(3) Combined Weight Calculation Based on the AHP-CRITIC Model. Combining AHP and CRITIC weighting results with range maximization as the objective can effectively reduce bias from single weighting methods while maximizing differences between evaluation results, thereby effectively distinguishing evaluation objects.

First, the range for combined weights is calculated. Based on weights calculated by AHP and CRITIC, the combined weight range is determined: w_i [w_i^-, w_i^+], where: w_i^+ = max{w_i^(1), w_i^(2)} w_i^- = min{w_i^(1), w_i^(2)} Formula (6)

Second, variance of evaluation results is calculated. The mean and variance of evaluation results are shown in Formulas (7) and (8), where for calculation convenience, y_i = x_i^* = x_i - $\bar{x}$, H = y_i y_i^T, and $\bar{w}$x = (1/k)(wx_1, wx_2, ..., wx_k).

Formula (7): $\bar{w}$x = (1/k) * sum(wx_i) for i=1 to k

Formula (8): Variance = (1/k) * sum(wx_i - $\bar{w}$x)^2 = wHw^T

Third, the combined weight optimization model is calculated. With range maximization as the objective and based on the simplified result from Formula (8), the optimization model is constructed as shown in Formula (9). Solving this optimization model yields the combined weights.

Formula (9): Maximize: wHw^T Subject to: w_i^- $\leq$ w_i $\leq$ w_i^+, sum(w_i) = 1, w_i $\geq$ 0

Implementation of the University Document Resource Guarantee Level Evaluation Index System

Combining the actual conditions of document resource guarantee work for first-class disciplines in seven "Double First-Class" universities in Hubei Province, this paper constructs an evaluation index system for university first-class discipline document resource guarantee levels.

4.1 Sample Selection and Data Sources

For subjective weighting data collection, this paper invited 12 library staff members and experts in library and information science, archives management, and informatization to complete questionnaires and collect expert opinions. For objective weighting data collection, surveys were conducted on seven universities in Hubei Province based on the screening indicators in Section 4.2. According to the characteristics of each university's first-class disciplines, they were subdivided into social sciences and natural sciences. If a university had more natural science than social science first-class disciplines, its natural science first-class disciplines were selected as the survey subjects. It should be noted that since humanities disciplines are relatively few in the first-class discipline construction list, only one of the surveyed "Double First-Class" universities included a humanities first-class discipline, which cannot adequately represent the construction status of humanities first-class disciplines or enable inter-institutional comparisons. Therefore, this paper only evaluates and compares social science and natural science disciplines.

Data were accessed from the website of the Steering Committee for University Library and Information Work of the Ministry of Education and university library websites to understand organizational structures and document service provision. Original data required for calculating document guarantee rates for surveyed disciplines were collected by accessing library document resources as users. Questionnaires were distributed to users in the surveyed disciplines from November 1, 2020, to December 31, 2020, to collect data on literature service usage and user satisfaction, with 274 questionnaires returned, of which 267 were valid.

4.2 Construction of the Evaluation Index Hierarchy Model

Focusing on three issues—whether document resources "exist," whether they are "used," and whether user needs are satisfied—and combining the approach and methods from Section 3.2.1, the evaluation index hierarchy model is constructed.

4.2.1 Establishment of Criterion Layer Indicators Starting from the work objective of improving teaching and research levels in universities, this paper briefly analyzes the document resource guarantee process to identify specific examination dimensions, as shown in Figure 2 [Figure 2: see original paper].

Libraries and users are two types of participants in the document resource guarantee process. Libraries are the constructors and service providers of document resources, and their document resource construction conditions affect guarantee levels. As recipients of document resources, users propose document needs, receive document resources and services, and generate accessible subjective evaluations during this process. User satisfaction can reflect the guarantee level of document resources and services for user needs to a certain extent. Additionally, whether users "use" library document resources is influenced by both

library document organization and service quality and users' own information literacy. Therefore, document resource utilization is also an aspect that cannot be ignored in guarantee level evaluation.

In summary, this paper constructs the evaluation system with three dimensions as the criterion layer: document resource construction, document resource utilization, and user satisfaction.

4.2.2 Establishment of Indicator Layer Indicators Selected indicators at the indicator layer should both describe conditions within their criterion and reflect different information from other indicators at the same level [16]. Based on these principles, this paper uses the method described in Step 2 of Section 3.2.1 to establish indicator layer indicators.

(1) Preliminary Indicator Screening. Drawing on the LibQUAL+TM evaluation model and existing research on evaluation indicators [4-16, 21-25], and according to the three criterion layers, preliminary screening, supplementation, and expansion of proposed evaluation indicators yielded 19 indicators describing first-class discipline document resource construction, 4 indicators for document resource utilization, and 10 indicators for user satisfaction, as shown in Table 1 .

Table 1: Preliminary Screening Results for Indicator Layer Evaluation Indicators - Document Resource Construction: Print document guarantee rate; Digital document guarantee rate; Book acquisition rate; Core journal acquisition rate; Procurement strategy update frequency; Core back-issue coverage rate; Database update frequency; Print resource update frequency; Electronic resource update frequency; Proportion of senior librarians; Professional librarian allocation; Procurement team composition; Whether collection catalog is established; Whether database navigation is established; Whether cross-campus borrowing is available; Whether unified retrieval platform is developed; Whether subject services are provided; Whether branch libraries are established; Whether off-campus electronic resource access is available - **Document Resource Utilization:** Literature service utilization; Literature service awareness; Citation guarantee rate; Interlibrary resource utilization - **User Satisfaction:** Document need satisfaction; Database navigation satisfaction; Retrieval system satisfaction; Document resource timeliness satisfaction; Document resource variety satisfaction; Service response speed satisfaction; Subject service fee satisfaction; Off-campus electronic resource access satisfaction; Librarian professionalism satisfaction; Literature service need satisfaction

(2) Sampling Survey and Indicator Finalization. This paper conducted sampling surveys based on the screened indicators, investigating document resource guarantee conditions at seven universities in Hubei Province from October 28, 2020, to November 18, 2020. The three most highly cited references from 2017-2019 master's and doctoral dissertations in the surveyed first-class

disciplines at the seven universities were selected as survey samples. These references were verified as users to check whether they were collected by the university libraries, providing original data for collection book and core journal guarantee rates. Librarian scale and structure data for the seven university libraries in 2019 were obtained from the Steering Committee for University Library and Information Work website [22]. Simultaneously, questionnaires were distributed to users in the surveyed disciplines at these seven universities from November 1, 2020, to December 31, 2020, to collect literature service usage and user satisfaction data, with 274 questionnaires returned, of which 267 were valid.

Evaluation indicators were screened based on survey data. First, qualitative indicators where all seven universities scored 1 (i.e., all seven universities met requirements) were eliminated. Then, pairwise correlation coefficients between remaining indicators were calculated. According to statistical standards for correlation, indicators within the same criterion layer with absolute correlation coefficients above 0.7 were compared and screened to avoid multiple indicators reflecting duplicate information. Ultimately, nine indicators meeting these requirements were obtained. Due to space limitations, only correlation coefficient calculation results for the final retained indicators are shown in Tables 2-4 .

Table 2: Correlation Coefficients Between Evaluation Indicators Under the First-Class Discipline Document Resource Construction Criterion Table 3: Correlation Coefficients Between Evaluation Indicators Under the First-Class Discipline Document Resource Utilization Criterion Table 4: Correlation Coefficients Between Evaluation Indicators Under the First-Class Discipline User Satisfaction Criterion

Through this screening process, this paper constructs a three-level evaluation hierarchy model for university first-class discipline document resource guarantee level evaluation, as shown in Figure 3 [Figure 3: see original paper]. The criterion layer contains three indicators, and the indicator layer contains nine indicators.

4.3 Calculation of Evaluation Indicator Weights

First, AHP and CRITIC are used to calculate subjective and objective weights for evaluation indicators. Formula (1) is applied for consistency testing of judgment matrices, with results shown in Table 5 . All matrix C.R. values are less than 0.1, passing consistency tests, indicating that collected expert opinions are reliable.

Table 5: Consistency Test Results

After passing consistency tests, Formulas (2) and (3) are used to calculate subjective weights for evaluation indicators. Formulas (4) and (5) are then used to calculate objective weights for each indicator. The subjective and objective weight calculation results are shown in Table 6 .

Based on the calculation results in Table 6, an optimization model as shown in Formula (9) is constructed to combine AHP and CRITIC weighting results with range maximization as the objective, obtaining combined weights for the evaluation index system. A full score of 100 points is established for each evaluation indicator. Specific indicator weights, scores, and indicator explanations are shown in Table 7 .

Table 6: University First-Class Discipline Document Resource Guarantee Level Evaluation Index System and Weights Table 7: University First-Class Discipline Document Resource Guarantee Level Evaluation Index System

Application and Analysis of the University Document Resource Guarantee Level Evaluation Index System

After passing consistency tests, this paper applies the constructed evaluation index system to evaluate the seven aforementioned universities, understanding the current status of first-class discipline document resource guarantee in "Double First-Class" universities to provide a basis for improvement.

5.1 Data Sources and Evaluation Process

This paper continues using data obtained in Section 4.2.2 for evaluation, obtaining scores for each indicator and level at each university and final guarantee level scores. The specific evaluation process is shown in Figure 4 [Figure 4: see original paper].

Figure 4: Evaluation Flowchart

5.2 Scoring Results and Analysis

Evaluation results for the seven surveyed universities are shown in Table 8 . From the overall scoring results, the three dimensions' individual rankings do not highly coincide with final rankings, demonstrating that the three criteria in the evaluation system are both interrelated and assess document guarantee levels from different aspects.

This paper further calculates mean scores and standard deviations by discipline type, with results shown in Table 9 . Comparing universities with the same surveyed discipline type reveals that social science document resource utilization rankings do not match their user satisfaction rankings, indicating that social science users' research work depends heavily on collection resources but their document needs are not well satisfied. Comparing total score means and standard deviations shows that social science document guarantee levels overall lead natural sciences, and natural sciences show greater gaps across dimensions, indicating that natural science document resource guarantee work does not adequately meet user needs and faces greater challenges than social sciences. Comparing criterion layer scores, the most significant gaps among universities

appear in document resource construction, while gaps in document resource utilization are relatively small, indicating that document resource acquisition and utilization capabilities do not vary greatly among users of different discipline types.

In summary, three aspects require attention in current first-class discipline document resource guarantee work: (1) Social science first-class discipline users' document need satisfaction is unsatisfactory. The large gap between social science document utilization and user satisfaction scores indicates that social science first-class discipline users' research work depends heavily on collection resources, but their document needs are not well met. (2) Natural science first-class discipline document guarantee lags overall. This is largely related to characteristics of natural science literature such as rapid updates and high costs. With deepening interdisciplinary integration, cross-disciplinary document guarantee faces increasing challenges. (3) First-class discipline user information literacy training and popularization and promotion of document services need strengthening. Compared with document resource construction, user satisfaction correlates more significantly with document resource utilization, indicating a large gap between whether document resources "exist" and whether they are "used," and that libraries have considerable room for improvement in strengthening user information literacy.

5.3 Discussion and Recommendations

Based on evaluation and analysis, this paper identifies three problems in current university document resource guarantee work: (1) Inadequate needs interviewing for social science first-class discipline users; (2) Significant difficulties in document resource construction focused on natural science first-class disciplines; (3) Insufficient implementation of user information literacy training and popularization of relevant document functions and services. Based on these problems, the following recommendations are proposed:

First, strengthen needs interviewing work for first-class discipline users (especially social sciences), fully understand user document needs, and better support teaching and research activities. Second, surveyed universities can benchmark against higher-guarantee-level universities using the evaluation index system, identify their own weaknesses, self-examine weak links, and adopt corresponding improvement measures, which is significant for improving first-class discipline teaching and research levels. Third, while constructing first-class discipline document resources, libraries should emphasize user information literacy training and popularization of document services. Improving document resource guarantee levels requires addressing not only "whether collections are comprehensive" but also timely solving "whether users can find" problems. Fourth, university document resource guarantee work should move from independence to collaboration. Libraries can attempt to implement and promote interlibrary document resource sharing services to reduce redundant construction, lower procurement costs, and overcome difficulties in first-class discipline (especially natural sci-

ences) document resource construction. Interlibrary document resource sharing can not only promote academic exchange between institutions but also effectively improve document resource guarantee levels.

Conclusion and Outlook

The research on constructing an evaluation index system for first-class discipline document resource guarantee levels aims to identify specific reasons affecting guarantee levels to improve document resource guarantee work, better serve university "Double First-Class" construction, and lay a good foundation for developing China's document resource guarantee cause. Based on existing research and the development status of document guarantee work in China's "Double First-Class" universities, this paper constructs an evaluation index system for university document resource guarantee levels consisting of three dimensions—first-class discipline document resource construction, first-class discipline document resource utilization, and first-class discipline user satisfaction—and nine evaluation indicators. The constructed evaluation index system is applied to seven "Double First-Class" universities in Hubei Province to evaluate document resource guarantee levels, analyze existing problems in university document resource guarantee work, and provide reference recommendations for improvement.

The evaluation indicators selected in this paper are only applicable to current development levels of "Double First-Class" university libraries. As interlibrary sharing services for university document resources are promoted and used among users, the importance of collection guarantee rates will gradually decline, while comprehensive guarantee rates and convenience of virtual collection resource access will receive increasing attention. Next steps will involve continued research on methods and models for promoting interlibrary document resource sharing among universities and improving user document resource utilization levels.

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Author Contributions

Xia Lixin: Conceived the research topic, proposed the framework, and finalized the manuscript. Yang Yuan: Collected and analyzed data, wrote and revised the manuscript. Zhou Ding: Designed the manuscript framework and revised the manuscript.

Research on the Construction of the Evaluation Index System of Document Resource Guarantee Level in Chinese Universities in the View of "Double First-Class" Construction

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Abstract: [Purpose/Significance] In the view of "Double First-Class" construction, the evaluation of document resource guarantee level in universities is related to the improvement of teaching and scientific research levels. By analyzing the participating subjects and specific guarantee process of document resource guarantee for first-class disciplines in universities, the evaluation index system is constructed to provide references for improving the level of document resource guarantee in universities. [Method/Process] This paper established an evaluation index hierarchy model from three dimensions: document resource construction, document resource utilization, and user satisfaction of first-class disciplines. Based on the AHP-CRITIC model, the evaluation indicators were combined and weighted. Finally, the study took 7 "Double First-Class" universities in Hubei Province as research objects to conduct empirical research. [Result/Conclusion] The established evaluation index system of document resource guarantee level of "Double First-Class" universities is composed of 3 primary indicators and 9 secondary indicators. Through analysis of the evaluation results, the study summarizes the current problems in the work of document resource guarantee in domestic universities and puts forward relevant suggestions.

Keywords: AHP-CRITIC; Document Resource Guarantee; Evaluation Index System; "Double First-Class" Construction

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