



Construction of an Evaluation Index System for Decision - Support Services in "Double First - Class" University Libraries Based on the CIPP Model

Yamin Wu^{1,*}, Naixuan Zhao², Jiaxin Wang³

¹School of Economics and Management, Nanjing Tech University, Nanjing, China

²Nanjing Tech University Library, Nanjing, China

³College of Economics, Guangdong University of Finance and Economics, Guangzhou, China

*Email: 18727391186@163.com

Abstract. In the context of the "Double First - Class" initiative, most university libraries have launched decision - support services. However, there are certain differences in the implementation levels among different university libraries, and further research is needed on the effectiveness of these services. This study uses the CIPP model to construct an evaluation index system for decision - support services in "Double First - Class" university libraries from four dimensions: environment, resources, process, and results.

Keywords: CIPP evaluation model; University libraries; Decision - support services; Evaluation index system

1 Introduction

The decision - support services of university libraries initially mainly served the university management departments. Based on the rich resources of the library, librarians used professional literature collection skills and intelligence analysis methods to collect, classify, process, and comprehensively analyze multi - source information, forming systematic decision - making knowledge products for decision - makers to refer to, aiming to improve decision - making efficiency [1]. Subsequently, with the construction of new - type think tanks, libraries expanded their service targets to different groups such as university scientific research, government, and enterprises by drawing on the concept of think tanks [2].

Currently, the "Double First - Class" construction has entered its second cycle. The demand for decision - support services in higher education institutions is increasing day by day. To assist in the "Double First - Class" construction of their universities, university libraries are continuously researching how to provide decision - making information and evaluation consultation services for teaching and scientific research. In this context, it is particularly important for university libraries to explore decision - support services oriented towards different user needs under new environments, requirements, and developments. At the same time, a relatively complete evaluation system for

university library decision - support services is needed to evaluate the effectiveness of these services.

2 Literature Review

At present, the decision - support services carried out by university libraries have become an important means for school leaders and relevant departments to "attract talents", "cultivate talents", and promote discipline development [3], showing the characteristics of knowledge - based services. With the continuous deepening of decision - support services in university libraries, more and more libraries are gradually providing professional information services to demand groups such as college research teams, providing disciplinary decision - making intelligence services for disciplinary construction needs, and providing service references for government macro - decision - making needs.

Current research on decision - support services in university libraries mainly focuses on the following aspects:

①Research on service systems. In the research of library decision - support service systems, most studies focus on a specific function. For example, Wu Aizhi [4] explored the main content, basic process, and implementation forms of disciplinary strategic intelligence services. Yuan Yang [5] and others constructed a disciplinary decision - making intelligence service work system based on a unified disciplinary data repository by combining domestic and foreign disciplinary decision - making intelligence service practices. ②Research on service methods. Most studies are based on library practices. For example, Pan Wei [6] and others took the product - based intelligence services of Shanghai Jiao Tong University Library as an example to explore the sustainable development strategies of intelligence analysis services from a practical perspective. Yao Lan [7] and others took Beijing Normal University Library as an example to summarize a multi - dimensional scientific research evaluation demand system formed based on management decision - making needs, disciplinary and college needs, academic research needs, talent assessment needs, and social user needs. ③Research on service effectiveness evaluation. Sun Ruiying [8] and others constructed an evaluation system for the think - tank service capabilities of university libraries based on the input - output model, evaluating their service capabilities from four dimensions: resource base, operation ability, service results, and service influence. Deng Zhiqing [9] summarized the evaluation indicators of think tanks into four aspects: factor endowment, organizational construction, output of results, and comprehensive influence based on five domestic and foreign think - tank evaluation projects.

3 Construction of the Index System Based on the CIPP Evaluation Model

3.1 Rationality Explanation and System Construction

The CIPP evaluation model was proposed by American scholar Stufflebeam. It is a comprehensive framework for evaluating personnel, products, institutions, or systems, including four aspects: context evaluation, input evaluation, process evaluation, and product evaluation ^[10]. Since its first release in 1992, the CIPP evaluation model has become an important theoretical guidance in the field of educational evaluation ^[11]. In China, there are many evaluation index systems for curriculum teaching quality constructed based on the CIPP evaluation model. Some studies have also used the CIPP evaluation model to construct a quality evaluation model for think - tank results in China ^[12], which provides ideas for the evaluation research of this paper.

The evaluation object of the CIPP evaluation model is not an event but a process. Stufflebeam believes that the fundamental purpose of evaluation is to provide effective information to promote development and construction through evaluation ^[13]. This is also consistent with the core of providing decision - support services in university libraries. The provision of decision - support services in university libraries is also a process. The ultimate goal is to discover the differences in services provided by different university libraries according to the evaluation results, absorb excellent experiences, and further improve service practices. Based on the above rationality demonstration and consultations with experts in related fields, this paper constructs an index system based on the CIPP evaluation model, combining previous research and investigations of university libraries, as shown in Table 1.

Table 1. Index System Based on the CIPP Evaluation Model

Evaluation Dimension	First-level Indicator	Second-level Indicator	Indicator Explanation	Reference Sources
Environmental Support	Internal Environment	National Intellectual Property Information Service Center of the University	Whether it has been approved	Liu Yang et al. ^[14]
		Science and Technology Novelty Search Station of the Ministry of Education	Whether it has been approved	Xu Zishuo ^[15]
	External Environment	Number of "Double First-Class" Disciplines	Construction quantity	Yang Zhao ^[16] , Liu Haiyan ^[17]
		Number of First-level Discipline Doctoral Degree Authorization Points	Number of authorization points	-
Re-source	Human Resources	Number of On-staff Personnel	Number of on-staff librarians	Luo Lan ^[18] , Zhang Xu et al. ^[19]

Sup- port		Expenditure on Print Resources	Amount of funds	Hu Xiaomei et al. ^[20] , Wang Xiaokun ^[21]
	Funding Sup- port	Expenditure on Electronic Re- sources	Amount of funds	Hu Xiaomei et al. ^[20] , Wang Xiaokun ^[21] , Xiong Xia et al. ^[22]
	Institutional Setup	Number of Deci- sion Support Ser- vice Departments	Number of depart- ments offering decision support services in the library	Lin Feifei ^[23] , Fang Fei ^[24]
		Disciplinary Ser- vice Column	Whether it is estab- lished	Yao Lan et al. ^[25] , Xu Chun ^[26]
	Degree of Disciplinary Support	Types of Discipli- nary Services	Scored according to the number of types	Su Jiechu et al. ^[27]
		Disciplinary Ser- vice Platform	Whether it is built	Xiao Chenran ^[28] , Yan Fang ^[29]
		Display of Disci- plinary Service Cases	Whether it is displayed	-
Process Sup- port		Scientific Re- search Service Column	Whether it is estab- lished	Zheng Lixia ^[30] , Xing Wan- zhen ^[31]
	Degree of Sci- entific Re- search Sup- port	Types of Scientific Research Services	Scored according to the number of types	Liu Tingting ^[32] , Ma Xuan et al. ^[33] , Zheng Lixia ^[30] , Xing Wanzhen ^[31]
		Self-built Institu- tional Repository	Whether it is con- structed	Tian Aiping et al. ^[34]
			Teaching Service Column	Whether it is estab- lished

Result Sup- port	Degree of Teaching Support	Types of Teaching Services	Scored according to the number of types	Liu Kezhi ^[35]
	Number of Papers	Total Number of Papers	Total number of papers related to the library's decision support ser- vices from 2016 to 2023	Zhang Xu et al. ^[19] Zhang Fang et al. ^[36]
	Citation Fre- quency	Total Number of Citation Times	Total number of cita- tion times of library decision - support ser- vice papers from 2016 to 2023	-

4 Conclusion

This article recognizes the importance of the decision support services carried out by libraries in various universities in China under the background of the "Double First-Class" initiative, as well as the necessity of evaluating these services. Based on the evaluation ideas of the CIPP evaluation model, an evaluation index system for the decision support services of university libraries in China is constructed, encompassing environmental support, resource support, process support, and outcome support.

References

1. Li F, Ma F Z, Zhang C H, et al. Investigation and Reflection on the Decision - Support Services of University Libraries in China[J]. Journal of Academic Libraries, 2017, 35(2): 56 - 61.
2. Zhang X, Zhang X X, Lu H. Research on the Decision - Support Service Model and Strategies of University Libraries[J]. Library and Information Service, 2019, 63(07): 15 - 22.
3. Liang D Y, Liu L G, Lan X C. Decision - Support Services: The Inevitable Choice for the High - Quality Transformation and Development of Smart University Libraries in the New Era[J]. Library and Information Herald, 2024, 9(1): 7 - 15.
4. Wu A Z. Exploratory Research on the Disciplinary Strategic Intelligence Services of University Libraries[J]. Journal of Academic Libraries, 2023, 41(05): 18 - 25.
5. Yuan Y, Xiao H. Construction of the Disciplinary Decision - Making Intelligence Service System of University Libraries Based on Data Governance[J]. Library, 2022,(12): 57 - 64.
6. Pan W, Yang M, Dong J. Product - Based Intelligence Services to Support University Management and Decision - Making[J]. Journal of Academic Libraries, 2016, 34(06): 43 - 50.
7. Yao L, Zhang Q, Li S N. Research on the Fine - grained Scientific Research Evaluation Services of University Libraries Driven by Data and Requirements: Taking the Library of Beijing Normal University as an Example[J]. Journal of Academic Libraries, 2024, 42(1): 93 - 99.

8. Sun R Y, Ma X W. Evaluation of the Think - Tank Service Capabilities of University Libraries[J]. Library Tribune, 2021, 41(08): 120 - 131.
9. Deng Z Q. Exploring the Paths for University Libraries to Serve the Construction of University Think - Tanks from the Perspective of Evaluation Indicators[J]. Library and Information Service, 2019, 63(23): 21 - 29.
10. HAKAN K, SEVAL F. CIPP evaluation model scale: Development, reliability and validity[J]. Procedia - Social and Behavioral Sciences, 2011, 15: 592 - 599.
11. Liu M T. The Evolution and Enlightenment of the OECD Education Indicator System[J]. Research in Educational Development, 2009, 29(Z1): 67 - 70.
12. Han R Z, Yang S L. Research on the Quality Evaluation of Chinese Think - Tank Results Based on the CIPP Model[J]. Think Tank Theory and Practice, 2023, 8(4): 32 - 41.
13. Niu G Q, Xin B, Cao M J, et al. Research on the Current Situation of Popular Science Talent Training in China: Combining CIPP Evaluation with Typical Cases[J]. Modern Science, 2024,(04): 50 - 61.
14. Liu Y, Liu F, Liu X D. Construction of the Performance Evaluation Index System for Intellectual Property Information Services in University Libraries: Taking 60 University Intellectual Property Information Service Centers as an Example[J]. Chinese University Science & Technology, 2024,(04): 100 - 106.
15. Xu Z S. Research on the Standardization of Science and Technology Novelty Search Services in University Libraries from the Perspective of Scientific Research Evaluation[J]. Jiangsu Science & Technology Information, 2024, 41(20): 76 - 79.
16. Yang Z. Research on the World - Class Discipline Evaluation Services of University Libraries in the Big Data Era[J]. Library and Information, 2018,(05): 81 - 86.
17. Liu H Y. Research on the Disciplinary Decision - Support Services of University Libraries in the Context of "Double First - Class"[J]. Inner Mongolia Science Technology & Economy, 2024,(18): 135 - 138.
18. Luo L. Research on the Evaluation of Smart Library Construction Based on the Hall Three - Dimensional Structure[D]. Nanjing University of Posts and Telecommunications, 2023.
19. Zhang X, Zhang X X, Lu H. Research on the Decision - Support Service Model and Strategies of University Libraries[J]. Library and Information Service, 2019, 63(07): 15 - 22.
20. Hu X M, Shan R F. Exploration of the Evaluation System for Legislative Decision - Making Services of Provincial Public Libraries[J]. Journal of Library and Information Science in Agriculture, 2017, 29(11): 184 - 189.
21. Wang X K. The Impact of Library Literature Resource Purchase Expenditure on the Overall Disciplinary Level of Universities: A Regression Analysis Based on the Data of 73 Universities[J]. Journal of the Library Science of Shanxi, 2022,(04): 64 - 73.
22. Xiong X, Gao F, Li M, et al. Design and Construction of the Statistical Index System for Electronic Resources in University Libraries[J]. Journal of Academic Libraries, 2021, 39(03): 59 - 66.
23. Lin F F. Investigation and Countermeasure Research on the Decision - Support Services of "Double First - Class" University Libraries[J]. Library Research and Work, 2021,(07): 60 - 66.
24. Dong F F. Research on the Decision - Support Services of University Libraries from the Perspective of Talent Introduction[J]. Jiangsu Science & Technology Information, 2024, 41(14): 104 - 107.
25. Yao L, Zhang Q, Li S N. Research on the Fine - grained Scientific Research Evaluation Services of University Libraries Driven by Data and Requirements: Taking the Library of Beijing Normal University as an Example[J]. Journal of Academic Libraries, 2024, 42(01): 93 - 99.

26. Xu C, Zhang J, Bian Z W. Research on the Service Model of University Libraries to Assist in the Construction of First - Class Disciplines[J]. *Journal of Academic Library and Information Science*, 2022, 40(06): 91 - 97+128.
27. Su J C, Yang X. Research on the Evaluation of Disciplinary Services in University Libraries Based on the CMM Theory[J]. *New Century Library*, 2023(07): 20 - 25.
28. Xiao C R, Liu M R. Research on the LibQUAL+® Evaluation of Disciplinary Services in University Libraries[J]. *Library Research and Work*, 2016,(06): 34 - 37.
29. Peng Y F. Research Status and Suggestions on the Disciplinary Evaluation Services of University Libraries[J]. *Journal of Academic Libraries*, 2024, 44(02): 84 - 88.
30. Zheng L X. Investigation on the Current Situation and Development Countermeasures of Scientific Research Support Services in University Libraries of "Double First - Class" Construction Universities[J]. *Library and Information Herald*, 2024, 9(08): 23 - 29.
31. Xing W Z. Practices and Inspirations of Scientific Research Support Services in University Libraries in Hong Kong[J]. *Journal of Academic Library and Information Science*, 2024, 42(03): 95 - 102.
32. Liu T T, Li Y. Empirical Research on the Scientific Research Support Services of University Libraries from the Perspective of the Knowledge Chain: Taking the Top 10 Universities in the QS World Ranking as an Example[J]. *Journal of Library Science*, 2023, 45(01): 52 - 56+92.
33. Ma X, Li X. Investigation and Analysis of Scientific Research Support Services of "Double First - Class" Universities Based on WeChat Official Accounts[J]. *Journal of Academic Libraries*, 2022, 42(06): 75 - 81.
34. Tian A P, Ma Q, Ma S, et al. New Developments in the Construction of University Institutional Repositories in China[J]. *Library and Information Herald*, 2019, 4(04): 34 - 38.
35. Liu K Z. Construction of the Evaluation Index System for Teaching Support Services in University Libraries[D]. *Huazhong University of Science and Technology*, 2020.
36. Zhang F, Gao Y. Research on the Support Services of University Libraries Based on the Whole Process of Scientific Research Achievement Evaluation[J]. *Library Development*, 2024,(02): 119 - 126.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

