

Fuzzy Evaluation Algorithm of Third-Party Scientific and Technological Achievements in Library Information Service Aided by Big Data

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Abstract: With the deepening reform of scientific and technological management methods, a new type of third-party scientific and technological achievement evaluation has gradually become a scale. Through the analysis of the current situation and dilemma of the evaluation of third-party scientific and technological achievements, this paper points out that the big data-assisted library can play a positive role in the authenticity, professionalism, scientificity and standardization of the third-party evaluation, and discusses the third-party evaluation-oriented evaluation methods. Contents of library information services. The purpose of this research is to explore and research new information services in which libraries are deeply involved in the evaluation of third-party scientific and technological achievements. By analyzing the problems existing in the evaluation of third-party scientific and technological achievements at this stage, the extension methods of library information services under the demand of third-party evaluation are discussed, and the development strategies of libraries for the evaluation of third-party scientific and technological achievements are put forward.

Keywords: Library Information Service, Fuzzy Evaluation Algorithm for Third-Party Scientific and Technological Achievements, Big Data Assistance

1. INTRODUCTION

The evaluation of scientific and technological achievements is an important part of scientific and technological evaluation, and its evaluation results play an important role in the transformation and transaction of scientific and technological achievements, and are an important part of scientific and technological activities and scientific and technological management. As we all know, a large number of scientific and technological achievements and cutting-edge technologies appear in scientific and technological literature. As the core supporting material, scientific and technological literature is an important guarantee for scientific, objective and fair evaluation of achievements. The third-party evaluation of scientific and technological achievements is a comprehensive evaluation of scientific and technological achievements by independent social institutions in accordance with certain laws, regulations, technical specifications, etc.

The third-party evaluation of scientific and technological achievements has made up for the shortcomings of excessive administrative intervention caused by the identification of scientific and technological achievements organized by the government in the past. It makes up for the shortcomings of excessive administrative intervention caused by the identification of scientific and technological achievements organized by government departments in the past. At the same time, the third-party evaluation of scientific and technological achievements is of great significance for mobilizing the enthusiasm of scientific and technological personnel for scientific research, promoting scientific and technological collaborative innovation, and accelerating the transformation of scientific and technological achievements. The technological level of the United States is in a leading position in the world, which is inseparable from the construction of their perfect technological evaluation system. Since the 1990s, the United States has promulgated the "Government

Performance Outcomes Act", which stipulates the role, functions, and powers of science and technology evaluation agencies at the government (Congress) level through legislation. ..

As the basic supporting materials for the evaluation of scientific and technological achievements, scientific and technological literatures are mainly included in various academic databases. But high acquisition costs make it difficult for third-party outcome evaluation agencies to gain access to them. The third-party evaluation of freshmen encounters many problems. Aiming at the dilemma of the evaluation of third-party scientific and technological achievements at this stage, this paper points out that the library, especially the library with high-end information service capabilities. After the third-party evaluation of scientific and technological achievements, its evaluation report has become an important basis and basis for the management of the entire scientific and technological achievements, and has irreplaceable significance. After the third-party evaluation of scientific and technological achievements, its evaluation report has become an important basis and basis for the management of the entire scientific and technological achievements, and has irreplaceable significance. Under the GPRA framework, the United States has formulated a complete set of top-down science and technology goals, decomposing the overall goals into annual goals, and then assigning the annual goals to various industry research institutions. [14].

Evaluation experts can make professional and subjective judgments on the advancement and maturity of the results, and a non-profit intelligence agency such as a university library will give innovative analysis conclusions based on literature. At this stage, the third-party evaluation lacks standardized and unified evaluation methods. In addition, the evaluation methods of various projects vary greatly. The

evaluation methods and index systems adopted by many evaluation agencies cannot meet the requirements, and the evaluation work lacks professionalism. [19].

to evaluate the timeliness of the results; using academic data and SPSS statistical software tools, the scientific research output and academic influence of authors with different identities can be evaluated. Our unit is currently carrying out the evaluation process of scientific and technological achievements: evaluation consultation → user entrustment → formal review → contract signing → appraiser evaluation → expert selection → expert consultation → comprehensive evaluation → conclusion announcement → report release. The United Kingdom adopts the method of government division of labor and private implementation for scientific and technological evaluation.

2. THE PROPOSED METHODOLOGY

2.1 The Library Information Service

The government is only responsible for the evaluation of science and technology policies and plans, and the evaluation of specific scientific research projects, scientific research institutions, and scientific and technological achievements is completely handed over to third-party institutions. The evaluation of third-party professional scientific and technological achievements means that according to the requirements of the client, experts are hired by third-party professional institutions to review and identify the scientific and technological achievements to be evaluated in accordance with the prescribed procedures and standards, and evaluate their scientific, creative, advanced, Feasibility and application prospects are evaluated. Most evaluation agencies only rely on the subjective judgment of experts in a short period of time to form evaluation conclusions.

They lack objective data analysis and evidence materials, and are prone to the problem that the evaluation conclusions given by different experts for the same project are very different. The library has provided scientific and technological novelty retrieval for scientific research users for more than 20 years. In the process of scientific research project establishment and conclusion, award declaration and achievement evaluation, the library guards the first level of "innovative analysis", which is affirmed by the administrative department. Insufficient awareness of evaluation. The phenomenon of "short-term, smooth and fast" application of scientific research projects by scientific and technological personnel is prominent. The application projects only focus on results, not patent applications, nor market demand and orientation.'

The British government does not directly participate in the evaluation, but determines the direction through the formulation of plans, and more professional institutions in various industries carry out the evaluation or achievement evaluation of specific research projects. Librarians (including report completers and quality supervisors) will attend each achievement defense and review meeting as retrieval experts, and report retrieval results and analysis conclusions on the spot. In the third-party evaluation work in the new era, only the above work It has been unable to fully adapt to the new needs, especially libraries with high-level information service capabilities. In this regard, the industry pointed out that the traditional scientific and technological novelty search in the era of big data should deepen the connotation of novelty search services, explore the needs of novelty search users, and provide in-depth, precise and diversified value-added services.

2.2 The Fuzzy Evaluation Algorithm for Third-Party Scientific and Technological Achievements

In this regard, the industry pointed out that the traditional scientific and technological novelty search in the era of big data should deepen the connotation of novelty search services, explore the needs of novelty search users, and provide in-depth, precise and diversified value-added services. Japan's science and technology evaluation is mainly completed by the government, among which major scientific projects or plans are evaluated by the Prime Minister's Office or the Policy Committee of the Science and Technology Conference; more professional projects in various industries are conducted by various industrial departments in Japan, such as the Ministry of International Trade and Industry. The Tectonic Council is responsible for the evaluation. , to further improve the quality of work in the future work. In some cases, such as when there is a conflict of opinion between the respondent and the review team, or review experts, it is also possible to explain the literature retrieval situation and supplement relevant supporting materials in real time to resolve the dispute.

Project achievement retrieval is the starting point of third-party evaluation, and it is also the basic guarantee for the authenticity and effectiveness of achievement evaluation. The library's traditional paper search and citation service guards the first hurdle of academic paper results. Intellectual property is the core of scientific and technological achievements, and intellectual property information services are the intelligent assistants of R&D personnel. Intellectual property information services include patent information retrieval and analysis services, patent database or intellectual property information system construction services, and other related intellectual property information services. The purpose of the evaluation is single. Among the commissioners of local scientific and technological achievement evaluation, most of them apply for evaluation for the purpose of applying for awards or promotion of professional titles, and most of the evaluations are based on level (leading, advanced) evaluation.

2.3 The Big Data Assistance

Constructing an evaluation index system based on LDA model and patent text mining can realize technological innovation evaluation of enterprises and other innovative entities. There is a lack of an evaluation index system that truly and comprehensively reflects scientific and technological achievements. Many units or institutions use the same set of evaluation indicators for evaluation, and do not conduct evaluations according to research directions, different disciplines, and industry categories. . As the evaluation institution that best understands the value of the results and has the most direct contact with the results, it is obviously the most suitable institution to carry out the transformation of the results. Therefore, the third-party achievement evaluation agency should, on the basis of the evaluation, serve as a paid scientific and technological achievement evaluation service, and both parties should carefully discuss the service remuneration.

In the third-party evaluation work, checking and checking citations not only needs to verify the authenticity and inclusion of the papers provided by the project completers, but also needs to judge the timeliness of the papers based on the completion time of the project results. Huagong Library has agreed with the "National Review Company" to charge according to the number of items, and it is proposed that each item will be charged for retrieval and analysis according to the

percentage of the result evaluation income. . In addition to checking and citing, the intellectual property information service emerging in the library in recent years also provides a search service port for research results with intellectual property rights such as patents and soft works. Using patent maps based on bibliometric and text mining methods, it can provide R&D personnel with suggestions for patent strategic layout.

The construction of evaluation and consulting expert database is lagging behind. The expert database is not updated in a timely manner, the number of experts is small, and the professional structure is unreasonable; the expert selection system is unreasonable, the professional level of experts is uneven, and the knowledge update speed of some old experts is slow, which cannot keep up with the development requirements. Build a scientific and technological achievement transformation team that conforms to the law of market operation, establish a complete file management database, use network technology and big data to classify and manage the evaluation results, and connect with the demander, and play a bridge role between the result demander and research institutions . An analysis report that satisfies both evaluation agencies and evaluation experts is the foundation of the cooperative scientific and technological achievement evaluation service of university libraries. Literature retrieval is the basic skill of information consulting librarians.

3. CONCLUSIONS

In addition, because scientific and technological achievements may also include technical drawings, instructions, samples, construction methods, research reports, academic activities, academic soft papers and many other forms, third-party evaluation needs to make a comprehensive evaluation of the project results evaluation. The library information service for third-party achievement evaluation requires librarians to accurately analyze technological innovation, advancement, maturity, criticality and academic value with the help of various bibliometric methods and analysis tools.

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