Retraction

Retracted: Research on the Financial Support Performance Evaluation of Big Data Industry Development

Mathematical Problems in Engineering

This article has been retracted by Hindawi, as publisher, following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of systematic manipulation of the publication and peer-review process. We cannot, therefore, vouch for the reliability or integrity of this article.

Please note that this notice is intended solely to alert readers that the peer-review process of this article has been compromised.

Wiley and Hindawi regret that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] W. Fu, J. Zhao, C. Wang, and X. Zhou, "Research on the Financial Support Performance Evaluation of Big Data Industry Development," *Mathematical Problems in Engineering*, vol. 2022, Article ID 1972726, 9 pages, 2022.

Research Article

Research on the Financial Support Performance Evaluation of Big Data Industry Development

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In order to solve the problem that the traditional information systems have such as slow running responses and cannot meet the expected requirements of users, a performance evaluation method of financial support for the development of the big data industry is proposed. According to the characteristics of financial support, this paper uses the analytic hierarchy process (AHP) and the fuzzy comprehensive evaluation principle to establish a specific evaluation index system for the performance evaluation of financial support in the big data industry and select a suitable index group. In order to reflect the financial support performance, the analytic hierarchy process (AHP) is used to calculate the weight of various performance evaluation indicators, and the fuzzy comprehensive evaluation is used to combine qualitative analysis and quantitative analysis to evaluate and calculate the big data industry scientifically, objectively, fairly, and accurately. In financial support performance, experiments show that the proposed method not only has a fast response time but also can ensure that the actual results after the system runs are in line with the expectations of the system users.

1. Introduction

The big data industry is an economic set related to all links of data, such as its production, storage, analysis, processing, and application, and it is becoming a new growth point of the future economy and an important factor to promote economic structure transformation and industrial upgrading, leading to a new pattern of economic and social development. Adhering to the innovation-driven development, accelerating the deployment of big data and deepening the big data applications have become the intrinsic need and inevitable choice of stabilizing the growth, promoting the reform, adjusting the structure, benefiting the people, and driving the modernization of government governance ability. In order to keep up with the development pace of the world's big data, in recent years, the Chinese government has begun to pay attention to the research and development of the big data industry, with an investment exceeding 50% in the big data industry. The State Council of the People's Republic of China, the National

Development and Reform Commission of the People's Republic of China, the Ministry of Industry and Information Technology of the People's Republic of China, and so on are steadily promoting the development of the big data industry by means of targeted support, project support, and so on[1].

In the era of big data, by building a financial sharing center, the accounting processing efficiency can be improved. After the financial sharing center is established, an effective performance evaluation system can enable the management and employees of the financial sharing center to clarify their responsibilities and goals to ensure financial sharing. The center provides high-quality services for customers and at the same time promotes the continuous optimization of the process and improves the overall performance level. The article proposes a method to improve financial support from the aspects of clarifying performance evaluation goals, establishing performance evaluation indicators in the big data environment, improving information integration capabilities, and implementing performance evaluation work. The performance evaluation system

promotes the healthy and orderly development of the financial sharing center. Big data is an interdisciplinary field, and the big data industry stretches across education, transportation, consumption, electricity, energy, health, finance, and other fields, and as an emerging industry with huge strategic significance, it should be supported and helped by finance in the early stages of development. Therefore, it is necessary for us to increase our financial investment in the big data industry, improve the infrastructure of the industry, and promote the healthy and rapid development of the big data industry [2–4].

2. Literature Review

There are few research studies on the financial support of the big data industry by scholars at home and abroad, but since the big data industry belongs to the emerging high-tech industry, the research on financial support for the high-tech industry's development can also be applied to the big data industry. This paper summarizes and sorts out the existing domestic and foreign literature mainly on two aspects: the influence of financial support and the performance evaluation of financial expenditure.

Some scholars have found through research studies that the effect of financial subsidies and preferential tax policies is obvious, and these research studies mainly focus on the incentive effect on enterprise R&D activities. Bloom et al. carried out comparative analysis on the economic data of eight countries in the OECD and believed that the preferential tax policies had a promoting effect on the improvement of enterprise R&D investment [5–7]. The economists, Rosa, Hanel, and Czarnitzki et al., researched Canadian companies and believed that the tax credit policy for enterprise R&D activities not only stimulates enterprises to increase R&D investments but also improves the output and profit of enterprise R&D activities. Kohler et al. believed that tax preferences or financial subsidies can promote the research and development of enterprises. Through researching the financial policies that play a major role at different stages, Deng Ziji found that the financial subsidy policy had a certain incentive effect at all stages of technological innovation, including the research and development stage and the achievement transformation stage. However, by researching, other scholars believed that financial subsidies and preferential tax policies had no effect or even had negative effects. Jaffe believed that financial subsidies or preferential tax policies had an inhibitory effect on the research and development of enterprises. Guellec and van Pottelsberghe analyzed the panel data of 17 countries in the OECD and found that the price elasticity of tax preference to enterprise R&D expenditure was negative. Tzelepis and Skuras researched and found that financial subsidies implemented for enterprise investment cannot improve the operation efficiency and profitability [8–10].

In terms of financial expenditure performance evaluation, Drongelen and Cook pointed out that the performance evaluation system of government financial investment in science and technology should take the dynamic change characteristic of the requirements of stakeholders into consideration, and the key points of the performance evaluation at all stages should be different to some extent. Sohn, YongGyuJoo, and HongKyuHan used the SEM model to study the Science and Technology Promotion Fund of South Korea from three aspects, and Toshiyuki Sueyoshi et al. used the method of data envelopment analysis (DEA) to evaluate and compare the importance of R&D expenditures on Japan's IT enterprises and other manufacturing enterprises. Luo and Chen et al. used the DEA method to establish the financial investment performance evaluation index system and its main index. The science and technology output, which included scientific and technological achievements, economic benefits, and social effects, and the system were verified by taking the performance of local financial investment in science and technology as an example. Qin combined the AHP method and the variation coefficient weighting method, used manpower and financial investment as investment indexes, and used the output of scientific and technological achievements, output of economic benefits, and output of social benefits as the output indexes to build the science and technology performance evaluation model to analyze the financial expenditure performance [11, 12]. Liu built a specific framework for financial data management that accelerates the innovation process of modern enterprises' financial management models and focusses on the advantages of using the financial sharing center for enterprises and five specific processes for cost control, hoping to update people's perception of enterprises and traditional concepts of financial management [13].

3. Establishment of the Fuzzy Hierarchy Model

It is a complicated and systematic engineering to fully, accurately, objectively, and fairly carry out the comprehensive evaluation of financial expenditure performance, and it is necessary to establish the advanced, optimized, simple, and practical data model and rely on scientific decision method [14]. Guided by the theory of performance evaluation, this paper starts from the construction of the financial support performance evaluation index system of the big data industry, establishes a proper performance evaluation index system, discusses the basis and method for the determination of evaluation index standard value, and puts forward the comprehensive application of the analytic hierarchy process (AHP) method and fuzzy comprehensive evaluation method to make the empirical evaluation in order to solve the problem of fuzzy evaluation of qualitative indexes.

Using the FAHP method to carry out the quantitative evaluation is not only beneficial for making a comprehensive and objective evaluation of the efficiency of financial expenditure, reflecting the influence of various factors on the performance from different perspectives but also convenient for guiding and standardizing the management of financial expenditure in China. In view of the characteristics of nonlinearity and fuzziness in the process of the financial support performance evaluation of big data industries, this paper intends to construct several evaluation indexes, use

TABLE 1: Financial support performance evaluation index system of big data industry.

Target hierarchy	Criterion hierarchy	Index hierarchy	Concrete meaning
Financial support performance index evaluation system of the big data industry A	Financial investment A_1	The proportion of financial investment in the total financial amount	The proportion of big data industry investment in the total financial investment
		The total number of invested personnel	The number of the personnel engaging in big data industry
		The structure of invested personnel	The situation of the education background and professional titles of the personnel engaging in big data industry
		Invested material resources	The amount, category, and so on of material resources invested in big data industry
	Financial implementation A_2	The completion rate of financial investment fund plan	The ratio of the actual amount of funds invested to the amount of funds planned
		Financial capital management system	Whether the use of management system of financial investment funds is perfect
		Completion status of the technical indexes	Whether the technical indexes meet the expected goals
		Profit-tax rate of financial investment	The ratio of newly increased taxes to total financial investment
	Financial profit A_3	Output rate of financial investment	The ratio of financial investment to the output of big data industry
		Application conversion rate of big data achievements	The ratio of the achievements of the transformed application to the successful application achievements
		Per-capita number of published articles of the invested personnel	The ratio of the number of published articles to the total number of invested personnel
		Per-capita number of obtained patents of the invested personnel	The ratio of the number of obtained patents to the total number of invested personnel

FAHP (fuzzy analytic hierarchy process) to determine the index weight, calculate the composite score of the financial support performance, and finally obtain the quantitative and specific evaluation.

3.1. Evaluation Index. The diversity of big data output performance determines the multiobjective feature of its evaluation, so the financial support performance evaluation system of the big data industry should be a multiobjective evaluation system. The evaluation system can be constructed according to the idea of an analytic hierarchy process, reasonably choosing and setting the index system by hierarchy, attribute, quantity, and quality, and using the performance evaluation as the core. The evaluation index system is divided into the target hierarchy (financial investment performance), the criterion hierarchy (describing main aspects of the performance), and the index hierarchy (that can reflect the quantitative and qualitative indexes of the elements' characteristics).

According to the characteristics of financial support in the big data industry, this paper chooses three major categories of indexes, namely, financial investment, financial implementation, and financial profit, to reflect the financial support performance of the big data industry.

The financial investment mainly reflects the government's degree of emphasis on the investment in the big data industry. This paper selects four indexes to describe it from the perspective of investment, and the four indexes are the proportion of financial investments in the total financial amount, the total number of invested personnel, the structure of invested personnel, and the invested material resources.

The financial implementation mainly reflects the execution status in actual implementation of the government's financial support for the big data industry. There are four secondary indexes, and they are, respectively, the completion rate of a financial investment fund plan, the financial capital management system, the completion status of the technical indexes, and the profit-tax rate of financial investment.

The financial profit mainly reflects the economic and social benefits brought by the development of the financially supported big data industry. This paper chooses four secondary indexes to measure it, and they are the output rate of financial investment; the application conversion rate of big data achievements; the per-capita number of published articles of the invested personnel; and the per-capita number of obtained patents of the invested personnel.

3.2. Construction of Fuzzy Hierarchy Model. The fuzzy hierarchy model is constructed according to the evaluation index system, in which the criterion hierarchy of financial support performance evaluation index system of the big data

industry has three elements, and the index hierarchy has 12 indexes. The evaluation content and scope of each level are shown in Table 1:

4. Empirical Analysis

4.1. Determination of Index Weight

4.1.1. Construction of Judgment Matrix. Before calculating the weight of each index, the relative importance of each index should be judged, and these judgments are expressed numerically to generate the judgment matrix, as shown in Table 2. The judgment matrix represents the comparison of the relative importance between the relevant indexes of this hierarchy aiming at the target of the previous hierarchy. Based on the idea of analytic hierarchy process and on the basis of the above hierarchical structure of financial support evaluation index system, let us suppose that the judgment matrix to be constructed is $A = (a_{ij})$, in which the value of a_{ij} is the relative importance of the indexes and is determined by the following method.

In this paper, the relative importance of the indexes is obtained through pairwise comparison according to the specific situation, and then the judgment matrices of the primary and secondary indexes are obtained, as shown in Table 3.

Judgment matrix of the first-order indexes is as follows:

$$A = \begin{bmatrix} 1 & \frac{1}{3} & \frac{1}{7} \\ 3 & 1 & \frac{1}{2} \\ 7 & 2 & 1 \end{bmatrix}. \tag{1}$$

Similarly, judgment matrix of the second-order indexes can be obtained as shown in the following formula:

$$A_1 = \begin{bmatrix} 1 & 3 & 3 & 1 \\ \frac{1}{3} & 1 & 1 & \frac{1}{3} \\ \frac{1}{3} & 1 & 1 & \frac{1}{3} \\ 1 & 3 & 3 & 1 \end{bmatrix} A_2 = \begin{bmatrix} 1 & \frac{1}{3} & 3 & 5 \\ 3 & 1 & 5 & 6 \\ \frac{1}{3} & \frac{1}{5} & 1 & 3 \\ \frac{1}{5} & \frac{1}{6} & \frac{1}{3} & 1 \end{bmatrix} A_3 = \begin{bmatrix} 3 & \frac{1}{3} & 1 & 3 \\ 4 & 1 & 3 & 4 \\ 1 & \frac{1}{4} & \frac{1}{3} & 1 \\ 1 & \frac{1}{4} & \frac{1}{3} & 1 \end{bmatrix}. \tag{2}$$

4.1.2. Normalization Processing. The methods of calculating weight include the weighted least square method, the eigenvalue method, the square root method, the sum-product method, and so on. In the calculation of the financial support performance index evaluation system of the big data industry discussed in this article, the sum-product method is adopted to calculate the weight for the judgment matrix: normalize each column of the judgment matrix first, then sum the matrix after the normalization of columns according to rows, and normalize the vectors after the summation as the weight of each index factor. Take the judgment matrix A, for example,

$$A = \begin{bmatrix} 1 & \frac{1}{3} & \frac{1}{7} \\ 3 & 1 & \frac{1}{2} \\ 7 & 2 & 1 \end{bmatrix} \xrightarrow{\text{normalization}} \begin{vmatrix} 0.09 & 0.10 & 0.09 \\ 0.27 & 0.30 & 0.30 \\ 0.64 & 0.60 & 0.61 \end{vmatrix} \xrightarrow{\text{summation according to rows}} \begin{vmatrix} 0.28 \\ 0.87 \\ 1.85 \end{vmatrix} \xrightarrow{\text{normalization}} \begin{vmatrix} 0.09 \\ 0.29 \\ 0.62 \end{vmatrix}. \tag{3}$$

Similarly, the weight vectors of each element of each hierarchy of the judgment matrices of A_1, A_2, and A_3 can be calculated.

Thus, we can obtain the weights of the index in Table 1, and the results are shown in Table 4.

4.1.3. Matrix Consistency Check. The pairwise comparison matrix constructed above constitutes the foundation of decision analysis, and when comparing and judging the relative importance of the indexes because it is a man-made

comparison and judgment, there are often inconsistent judgments. Therefore, the consistency must be checked to find out whether the weight vector values calculated are scientific and reasonable. The specific checking steps are as follows.

Firstly, calculate the eigenvalue of the maximum of the judgment matrix $\lambda_{\max}$: $\lambda_{\max} = 1/n \sum_{i=1}^{n} \sum_{j=1}^{n} a_{ij} w_j / w_j$.

Calculate by taking the judgment matrix A as an example, $w = (0.09, 0.29, 0.62)^T$.

$$Aw = (0.28, 0.87, 1.83)^T \tag{4}$$

TABLE 2: Judgment matrix scale table.

Scale X_{ij}	Meaning
1	Factor i is as important as factor j
3	Factor i is slightly more important than factor j
5	Factor i is more important than factor j
7	Factor i is very important compared with factor j
9	Factor i is absolutely important compared with factor j
2, 4, 6, 8	Med-value of the above two adjacent judgments
Reciprocal 1, 1/2,... 1/9	The judgment value obtained by the comparison of factor j and factor i is the reciprocal of X_{ij}
	$X_{ji} = 1/a_{ij} X_{ii} = 1.$

TABLE 3: Primary indexes judgment matrix A.

Financial support performance A	Financial investment A_1	Financial implementation A_2	Financial profit A_3
Financial investment A_1	1	1/3	1/7
Financial implementation A_2	3	1	1/2
Financial profit A_3	7	2	1

TABLE 4: Weights of the indexes.

Target hierarchy	Criterion hierarchy	Weight	Index hierarchy	Weight
Financial support performance index evaluation system of the big data industry A	Financial investment A_1	0.09	The proportion of financial investment in the total financial amount	0.35
			The total number of invested personnel	0.15
			The structure of invested personnel	0.15
			Invested material resources	0.35
	Financial implementation A_2	0.29	The completion rate of financial investment fund plan	0.27
			Financial capital management system	0.55
			Completion status of the technical indexes	0.12
			Profit-tax rate of financial investment	0.06
	Financial profit A_3	0.62	Output rate of financial investment	0.27
			Application conversion rate of big data achievements	0.52
			Per-capita number of published articles of the invested personnel	0.10
			Per-capita number of obtained patents of the invested personnel	0.11

So, the judgment matrix A's $\lambda_{\max} = 1/3(0.28/0.09 + 0.87/0.29 + 1.83/0.62) = 3.02$.

Secondly, calculate the deviation index from the consistency, the CI value $CI = (\lambda_{\max} - n)/(n - 1)$, and n is the number of indexes in the matrix. The CI value of A is calculated according to the above formula: CI = $(3.02 - 3)/(3 - 1) = 0.01$.

Thirdly, find the average random consistency index, the RI value, as shown in Table 5.

Fourthly, calculate the random consistency ratio CR, $CR = CI/RI$. If $CR \geq 0.1$, the judgment matrix constructed fails in the consistency check and it needs to be adjusted; and if $CR < 0.1$, it can be considered that the judgment matrix has satisfactory consistency and the index weights obtained by the judgment matrix can be applied to the comprehensive measurement model. As CR is obtained by the above calculation: CR = CI/RI = 0.01/0.5149 = 0.019 < 0.1, which indicates that A has passed the consistency check.

Similarly, through processing and checking the judgment matrix of the index hierarchy, it is found that the judgment matrices of A_1, A_2, and A_3 pass the consistency check.

4.2. Fuzzy Comprehensive Evaluation.
The fuzzy mathematics comprehensive judgment is a method that makes comprehensive judgment of the subordinate hierarchy status of the evaluation object from multiple factors (or indexes) based on the composition principle of fuzzy relations. The following is a comprehensive judgment of fuzzy mathematics based on the above analytic hierarchy process.

4.2.1. Determine the Set of Evaluation Factors.
The financial support for the big data industry is a complicated process, and the factors that constitute it are complex, changeable, and uncertain, so these factors constitute a fuzzy set. How to

TABLE 5: RI value.

n	2	3	4	5	6	7	8	9	10
RI	0	0.5149	0.8931	1.1185	1.2494	1.3450	1.4200	1.4616	1.4874

TABLE 6: Judgment set of the factors.

Factor	Level 1	Level 2	Level 3	Level 4	Level 5
The proportion of financial investment in the total financial amount	Very high	High	General	Low	Very low
The total number of invested personnel	A great many	Many	General	A few	Few
The structure of invested personnel	Very good	Good	General	Poor	Very poor
Invested material resources	A great many	Many	General	A few	Few
The completion rate of financial investment fund plan	Very good	Good	General	Poor	Very poor
Financial capital management system	Very good	Good	General	Poor	Very poor
Completion status of the technical indexes	Very good	Good	General	Poor	Very poor
Profit-tax rate of financial investment	Very high	High	General	Low	Very low
Output rate of financial investment	Very high	High	General	Low	Very low
Application conversion rate of big data achievements	Very high	High	General	Low	Very low
Per-capita number of published articles of the invested personnel	A great many	Many	General	A few	Few
Per-capita number of obtained patents of the invested personnel	A great many	Many	General	A few	Few

TABLE 7: 0.1–0.9 scale table.

Definition	Scale	Meaning
Equally important	0.5	Two factors are equally important by comparison
Slightly more important	0.6	Factor A is slightly more important than factor B by comparison
Obviously more important	0.7	Factor A is obviously more important than factor B by comparison
Much more important	0.8	Factor A is much more important than factor B by comparison
Extremely more important	0.9	Factor A is extremely more important than factor B by comparison
Reverse comparison	0.1–0.4	$a_{ij} = 1 - a_{ji}$

select the main factors reflecting the financial support performance from this fuzzy set is the key in establishing the comprehensive evaluation model of financial support performance for the big data industry. According to the setting of the index system of the above analytic hierarchy process, the financial support performance evaluation system of the big data industry contains 12 secondary evaluation indexes. Thus, the fuzzy factor vector of the financial support performance evaluation system of the big data industry is obtained:

$$U = (u_1, u_2, u_3, \dots u_{12}). \tag{5}$$

4.2.2. Establish a Set of Judgment Vectors. Since there are three main factors of A_1, A_2, and A_3 and 12 secondary factors that affect the "financial support performance," the weights of the factors can be given according to the hierarchical analysis, as shown in Table 4. The judgment set consisting of five elements can be given for each of the secondary factors, for example (very good, good, general, poor, and very poor), (very high, high, general, low, and very low), and (a great many, many, general, a few, and few), as shown in Table 6.

4.2.3. Acquire Fuzzy Evaluation Information. Although using the method designated by experts is of a certain significance, its scientificity is questionable. Studies show that people can give more accurate judgment only at pairwise comparison, and when the number of factors is greater than 4, the fuzziness of determining the weight is more obvious, and the processing by the method of constructing a fuzzy consistent judgment matrix can eliminate the influence of man-made factors.

The fuzzy consistent judgment matrix R represents the comparison of the relative importance between a certain factor in the previous hierarchy and its related factors in this hierarchy. Suppose the factor C in the previous hierarchy is related to the factors a_1, a_2, a_3......a_n in the next hierarchy, then the fuzzy consistent judgment matrix F can be expressed as

$$F = \begin{bmatrix} r_{11} & r_{21} & \cdots & r_{1n} \\ r_{21} & r_{22} & \cdots & r_{2n} \\ \cdots & \cdots & \cdots & \cdots \\ r_{n1} & r_{n1} & \cdots & r_{nn} \end{bmatrix}. \tag{6}$$

Thereinto, r_{ij} indicates that factor a_i has a subordinate degree of the fuzzy relation of "a_i is more important than a_j" with factor a_j. It can be described in Table 7.

Experts are asked to give a fuzzy judgment of the pairwise comparison of the above 12 factors, and the following fuzzy complementary judgment matrix is obtained after the integration and adjustment:

$$A_1 = (r_{ij}) = \begin{bmatrix} 0.5 & 0.6 & 0.8 & 0.6 \\ 0.4 & 0.5 & 0.7 & 0.5 \\ 0.2 & 0.3 & 0.5 & 0.3 \\ 0.4 & 0.5 & 0.7 & 0.5 \\ 0.4 & 0.5 & 0.7 & 0.5 \end{bmatrix} A_2 = \begin{bmatrix} 0.6 & 0.6 & 0.8 & 0.6 \\ 0.5 & 0.5 & 0.7 & 0.5 \\ 0.3 & 0.3 & 0.5 & 0.3 \\ 0.5 & 0.5 & 0.7 & 0.5 \\ 0.5 & 0.5 & 0.7 & 0.5 \end{bmatrix}$$

$$A_3 = \begin{bmatrix} 0.7 & 0.6 & 0.6 & 0.4 \\ 0.6 & 0.5 & 0.5 & 0.3 \\ 0.4 & 0.3 & 0.3 & 0.1 \\ 0.6 & 0.5 & 0.5 & 0.3 \\ 0.6 & 0.5 & 0.5 & 0.3 \end{bmatrix}.$$

$$(7)$$

4.2.4. Determine the Fuzzy Weight Vector. The weight of each factor in the single-factor set is determined by analytic hierarchy process, and thus the fuzzy weight vector is obtained $\Omega = (w_1 w_2 w_3 w_4)$. The weight vector is obtained according to Table 4.

$$\Omega_1 = \begin{pmatrix} 0.35 & 0.15 & 0.15 & 0.35 \end{pmatrix}^T$$
$$\Omega_2 = \begin{pmatrix} 0.27 & 0.55 & 0.12 & 0.06 \end{pmatrix}^T \quad (8)$$
$$\Omega_3 = \begin{pmatrix} 0.27 & 0.52 & 0.10 & 0.11 \end{pmatrix}^T.$$

4.2.5. Comprehensive Judgment. The comprehensive judgment models adopted by the fuzzy relation matrix F with respect to weight Ω, include the main factor determining model, the main factor highlighting model, the weighted average model, and so on. The weighted average model $M(\bullet, +)$ can be used if all factors are considered to have an impact on the financial support performance.

$$A_1\Omega_1 = \begin{bmatrix} 0.342 \\ 0.210 \\ 0.404 \\ 0.210 \\ 0.210 \end{bmatrix} A_2\Omega_2 = \begin{bmatrix} 0.407 \\ 0.210 \\ 0.133 \\ 0.210 \\ 0.210 \end{bmatrix} A_2\Omega_2 = \begin{bmatrix} 0.364 \\ 0.210 \\ 0.126 \\ 0.210 \\ 0.210 \end{bmatrix}. \quad (9)$$

4.2.6. Assign Values to the Judgment Set. The components of the comprehensive evaluation level vector obtained above are generally a group of decimals, and a group of percentages can be obtained through multiplying 100%, respectively, by each of the elements of the vector, the meaning of which can

be considered to be the percentage of people favoring the evaluation levels of "Very satisfied, Satisfied, Basically satisfied, Dissatisfied, and Very dissatisfied." In practical applications, each level of the evaluation set is usually represented by a corresponding specific number. For this reason, we use the median method to assign values to the evaluation set and determine the centesimal system scores from high to low for each evaluation level. v_1 means the score interval of "Very satisfied" is [90, 100]; v_2 means the score interval of "Satisfied" is [80, 89]; v_3 means the score interval of "Basically satisfied" is [60, 79]; v_4 means the score interval of "Dissatisfied" is [50, 59]; v_5 means the score interval of "Very dissatisfied" is [30, 49]. Let us use the medians of the corresponding score sections of 95, 85, 70, 55, and 40 to assign values to the evaluation levels and assume that the valuation vectors of the judgment set, $V = \{v_1 v_2 v_3 v_4 v_5\}$, are (95, 80, 70, 55, and 40), so the comprehensive evaluation valuation of A_1 is $(95, 80, 70, 55, 40)$, $[0.342, 0.210, 0.404, 0.210, 0.210]^T = 97.485$. Similarly, we can obtain the comprehensive evaluation valuations of A_2 and A_3, and they are 84.702 and 80.091, respectively.

5. Analysis of Results

According to the characteristics of the financial support performance evaluation of the big data industry, we evaluate from three aspects of financial investment, financial implementation, and financial profit. By consulting relevant experts and scholars and according to the analytic hierarchy process, the respective weights of the three evaluation subjects are obtained, and thus the weight matrix is known as $w = (0.09, 0.29, 0.62)^T$. Suppose the centesimal system scores of the comprehensive evaluation results of the three aspects are H_1, H_2, and H_3, respectively so, the final evaluation of the financial support performance of the big data industry is as follows:

$$H_{\text{totalscore}} = w \begin{bmatrix} H_1 \\ H_2 \\ H_3 \end{bmatrix} = 0.09 * H_1 + 0.29 * H_2 + 0.62 * H_3. \quad (10)$$

It can be known from the evaluation set valuation content that $H_1 = 97.485$, $H_2 = 84.702$, and $H_3 = 80.091$ and combining with the above formula, the final score of the financial support performance evaluation of the big data industry is obtained.

$$H_{\text{totalscore}} = 0.09 * 97.485 + 0.29 * 84.702 \\ + 0.62 * 80.091 = 83.001. \quad (11)$$

So, the final score of the financial support performance evaluation of the big data industry is 83.001.

Among the three primary evaluation indexes selected in this paper, it can be seen from the weight vectors that the weight or proportion of financial profit is the largest, which shows that improving the economic and social benefits of the big data industry is the most important way to financially

support the development of big data industry. Therefore, it is necessary to strengthen the social contribution performance of enterprises, enhance the sense of social responsibility of enterprises, endeavor to improve the research and innovation ability of enterprises, and create the core competitiveness of enterprises at the same time.

6. Conclusion and Recommendation

This paper aims to evaluate the financial support of the big data industry in China. According to the evaluation process, by identifying the factors affecting the performance evaluation of financial support, choosing different evaluation methods, establishing a suitable evaluation, and in conjunction with the results of the evaluation of 3, a detailed analysis of financial support performance for large business data is carried out. Based on the understanding of each influencing factor, highlight the main and secondary effects. Pay special attention to the formulation and implementation of some financial rules, and provide better development suggestions and support for the big data industry.

In terms of the financial investment, the most important thing is the proportion of financial investment in the total financial amount and the invested material resources, which shows that the healthy and rapid development of the big data industry needs heavy financial investment from our country, including the investment of material resources, such as capital, research and development personnel, and infrastructure. This requires the country to integrate existing policy measures, perfect the financial policy system of the big data industry, and clarify the key areas and scope of the financial support.

In terms of the financial implementation, the weight of the financial fund management system is the largest, which indicates that fund management plays an important role in the development of the big data industry. In order to guarantee the reasonable and sound development of the big data industry, it is necessary for the country to introduce the big data industry standard as soon as possible and establish a systematic and thorough fund management system for the big data industry. The development of the big data industry will have a leapfrog change on the future development. First, big data technology will enhance the national governance capacity. Through the integration, analysis, summary, and application of historical data between different departments, it will have a positive prediction and prevention effect on public health, national defense security, education and medical care, public transportation, and other aspects. Second, the big data industry will bring about business model innovation. Third, the big data industry will change the way people think. One of the characteristics of the big data industry is that you know what, but not why. That is, we only need to know the final result of the data analysis, and we do not need to know its specific calculation process.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

Acknowledgments

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