The Application of Big Data Technology in the Construction of Financial Shared Service Center of Agricultural Enterprise Group

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The prerequisite for the reasonable construction and successful implementation of the financial sharing center of the agricultural enterprise group is that the agricultural enterprise group must fully understand the financial sharing center, understand the steps and key points of its construction, and comprehensively design and re-engineer the business process. This paper combines the big data technology to construct the financial sharing center system of agricultural enterprise groups, combines the machine learning algorithm to improve the big data processing algorithm, and builds the intelligent financial sharing platform with the support of the improved algorithm, and builds the overall system architecture and operation process. After constructing the system, the performance verification and practical verification of this system are carried out through experimental research. From the research results, it can be seen that the system constructed in this paper has good data processing effects and data sharing effects, and has good security, which meets the financial sharing needs of agricultural enterprise groups.

1. Introduction

In recent years, the level of industrialization of the agricultural industry has been continuously improved, and there have been more and more large-scale agricultural material enterprises, which has provided a strong boost to the improvement of farmers' living standards and the modernization of the primary industry, and the social and economic level of rural areas has been continuously improved. The first is that my country's large-scale agricultural enterprises have greatly improved both in quantity and quality [1].

Since the reform and opening up, China’s economy has developed rapidly, and many large enterprise groups have also been established. This organizational form of enterprise group is generally centered on a relatively powerful enterprise, and small enterprises whose main business is the operation and development of capital, production links, and key technologies related to the core enterprise are the peripheral layers. Then, each enterprise follows certain related systems and obeys the unified leadership of the core enterprise. This kind of tedious and huge organizational form prevents enterprise groups from being able to grasp the operation of the entire enterprise as quickly as small enterprises. Therefore, at this time, the internal audit department is particularly important as a supervision and control department. The work efficiency of the audit department directly affects the work efficiency of decision-makers [2]. In particular, in the past few years, many influential large-scale enterprise groups have been exposed to financial fraud scandals, which have caused huge losses to the society and economy, and are also not conducive to the development of their own enterprises. This makes major enterprise groups pay more attention to the financial operation risks of their enterprises, which further shows the importance of the internal audit department [3].

Since the beginning of the last century, science and technology have developed by leaps and bounds, and the business environment of enterprises is constantly changing. Only companies that efficiently handle the collection and application of financial data can remain invincible in the ever-changing development environment. However, for the large-scale enterprise organization form of enterprise group, the traditional financial processing method is no longer suitable for their development, and even will have an adverse
effect on the business development of the enterprise. Because, in the entire enterprise group, if each branch company processes its own financial data separately, it will easily lead to "information islands," and will lead to the duplication of financial work, increase the cost of financial work, and reduce the efficiency of financial work. What is more serious is that due to performance reasons, some branch companies sometimes exaggerate their operating performance, misrepresent their operating results, or even directly falsify financial data. This makes it difficult for the parent company to obtain accurate information in time and make wrong decisions. The enterprise caused huge losses. For this reason, many enterprise groups are trying to improve this situation. In this economic environment, the financial shared service center emerged as a new financial processing model. This financial processing mode applies unified procedures and specifications to centralize financial data to a semi-self-service data processing platform so that the standardization unifies financial data, while also reducing financial processing costs and improving work efficiency.

Financial crisis is the final transformation process of financial risk accumulation from small to large. Therefore, in the process of business development, the state of financial risks must be monitored in real time in order to avoid bankruptcy. Once problems with the state of financial risks are discovered, correct advance decisions can be made to prevent them in time. For financial risks, most companies take after-the-fact management measures after the financial risk has caused a financial crisis. The after-event measures are often not timely enough. Therefore, the financial risk early-warning system as a pre-predicted financial risk early-warning system is becoming more and more important. We can start from the combination of the company's past operating conditions and current status, and strive to make correct predictions before the occurrence of financial crises to prevent fatal risks.

This paper studies the application of big data technology in the construction of financial shared service centers of agricultural enterprise groups, improves the development efficiency of agricultural groups, builds intelligent data sharing centers, and promotes sustainable agricultural development.

2. Related Work

The study of financial risk early warning in foreign countries began in the 1930s, and the initial early warning model was the simplest univariate model. Through the efforts of many scholars and researchers, the research on financial risk early warning models has evolved from the simplest univariate model to a complex multivariate model, which has become more perfect and more realistic year after year. In terms of financial early warning models, the literature [4] established an unprecedented logistic regression early warning model to deal with the financial risks of high-risk industries. This model can accurately measure the risk area that high-risk enterprises are in, and make corresponding financial risk predictions based on specific risk areas. The literature [5] abandoned the traditional logistic regression early warning model when studying the financial industry, and established a brand new semiparametric single index model. The literature [6] believed that quantitative and qualitative methods should be used when facing financial risks of real estate enterprises and establishing financial early warning models. The two are indispensable, and new elements such as external financing capacity, EVA, cash flow, board size, and board of supervisors have been added to the traditional financial early warning model to form a brand new model. The literature [7] proposed a new type of multivariable early warning model. This kind of multivariable early warning model can make in-process analysis during the Lehman crisis or help postcrisis financial decision-making, and is of great benefit to the financial crisis of the entire country. The literature [8] established a logistic regression early warning model with higher accuracy than traditional models and verified the accuracy of the logistic regression early warning model by using nonfinancial efficiency indicators of data envelopment analysis. This analysis method is also completely new. In the face of the recently extremely active Internet financial industry, the literature [9] proposed that the financial early warning model should be combined with the big data system, and based on this, established a new financial early warning model for the Internet financial industry. The literature [10] proposed that a targeted financial early warning model should be established for the entire industry environment, and at the same time believed that the entire industry environment has a particularly profound impact on corporate financial risks in the market. The literature [11] studied the banking financial risk early warning system, established a number of logistic regression early warning models and binomial logistic regression early warning models, and compared the accuracy of the model predictions. Finally, it is compared that the multinomial logistic regression early warning model is better than the binomial logistic regression early warning model.

The literature [12] used genetic algorithm to analyze the financial risk early warning of the banking industry when establishing the financial early warning model, and after obtaining the final test prediction result, it is considered that this algorithm is feasible and reliable. The literature [13] combined artificial neural network (ANN) and multivariate linear analysis (MDA) technology to conduct financial early warning analysis of large enterprises. After research, it is found that more than 15% of the enterprises have various financial risks. The literature [14] established a financial early-warning model based on SOM and BP neural network to study the financial early-warning of listed enterprises. The literature [15] studied and proposed to establish an effective financial risk early warning model that can use various indicators other than financial indicators. The literature [16] successfully built a financial risk early warning system, which can achieve the expected early warning effect through 16 kinds of financial information. The literature [17] built a universal EWS financial risk early warning model for various enterprises in the economic market, and verified its reliability. The literature [18] proposed that in addition to ordinary financial information, other nonfinancial information should be paid attention to in the financial risk early
warning system. For example, nonfinancial information such as economic weakness can provide good help to the early warning results. The literature [19] found that the importance of cash flow is irreplacable during the establishment of a financial risk early warning model. When studying the financial risk of underdeveloped countries to establish a model, the literature [20] found that adding time indicators greatly improves the accuracy of the early warning model. The literature [21] proposed that enterprises and institutions facing the financial industry do not necessarily have to use a multivariate early warning model, and believed that a univariate model can have a good early warning effect.

3. Improved Application of Big Data Technology in Financial Shared Service Center of Agricultural Enterprise Group

The current Dropout model sets a constant dropout rate for each hidden layer of the deep learning model, which is 0.5. In other words, each neuron of the deep learning model is randomly activated with a probability of 0.5. This method ignores the relationship between the dropout rate and the position of the hidden layer. A large number of studies have shown that the features of the underlying hidden layer have a higher effect on data feature learning and classification than the features of the upper hidden layer. Therefore, the number of activated neurons that need to be retained in the bottom layer should be more than the number of activated neurons retained in the upper hidden layer. To this end, this paper designs an adaptive distribution function that takes the position of the hidden layer as the independent variable, and takes the activation probability of the hidden layer neurons as the dependent variable. The activation probability of each hidden layer is set according to the position of the hidden layer as the dependent variable, and takes the activation probability of the hidden layer neurons as the independent variable. The activation probability of each hidden layer is set according to the position of the hidden layer. Through the above analysis, the adaptive distribution function decreases monotonically with the increase of the hidden layer position. In addition, Hinton’s Dropout model shows that the activation probability of each layer of neurons should be about 0.5. At this time, it can ensure that enough activated neurons are retained, and at the same time, enough neurons can be discarded, which is conducive to the generalization of the deep calculation model. Finally, the value range of the Dropout rate of each layer needs to be in the (0, 1) interval.

Therefore, the adaptive distribution function designed in this paper is shown as follows:

\[
\rho = f(l) = \begin{cases} 
1 - \frac{1}{\sigma \sqrt{2\pi}} \int_{-\infty}^{l} \exp \left( -\frac{(l - n/2)^2}{2\sigma^2} \right) \, dl & n = 2k(k \in N_+) \\
1 - \frac{1}{\sigma \sqrt{2\pi}} \int_{-\infty}^{l} \exp \left( -\frac{(l - n + 1/2)^2}{2\sigma^2} \right) \, dl & n = 2k + 1
\end{cases}
\]

(1)

Among them, \(\rho\) represents the dropout rate, \(l\) represents the position of the hidden layer, and \(n\) represents the number of layers of the depth calculation model. At the same time, \(\sigma\) indicates that the parameter is used to control the change range of the Dropout rate.

The adaptive function \(\rho = f(l)\) satisfies the following three properties:

1. Monotonically decreasing. That is, as the hidden layer rises, the probability of neurons being activated decreases.
2. The activation probability of neurons in the middle hidden layer is 0.5.
3. \(\rho \in (0, 1)\). That is, the probability of each neuron being activated is between (0, 1). The proof is as follows:

\[
\begin{align*}
\frac{\partial}{\partial l} f(l) &= - \frac{1}{\sigma \sqrt{2\pi}} \exp \left( -\frac{(l - n/2)^2}{2\sigma^2} \right) < 0 \\
&\text{when } n = 2k \in N_+, \\
&\frac{\partial}{\partial l} f(l) &= - \frac{1}{\sigma \sqrt{2\pi}} \exp \left( -\frac{(l - n + 1/2)^2}{2\sigma^2} \right) < 0 \\
&\text{when } n = 2k + 1 \in N_+.
\end{align*}
\]

Because of \(f'(l) < 0\), \(\rho = f(l)\) is a monotonically decreasing function.

2. When the number of hidden layers is even, that is, when \(n = 2k \in N_+\):

\[
\rho = f\left(\frac{n}{2}\right) = 1 - \int_{-\infty}^{n/2} \frac{1}{\sigma \sqrt{2\pi}} \exp \left( -\frac{(l - n/2)^2}{2\sigma^2} \right) \, dl = 0.5.
\]

(3)

When the number of hidden layers is odd, that is, when \(n = 2k + 1 \in N_+\):

\[
\rho = f\left(\frac{n+1}{2}\right) = 1 - \int_{-\infty}^{n/2} \frac{1}{\sigma \sqrt{2\pi}} \exp \left( -\frac{(l - n+1/2)^2}{2\sigma^2} \right) \, dl = 0.5.
\]

(4)

Therefore, the activation probability of each neuron in the middle hidden layer is 0.5.

3. Since \(f\) is a strictly decreasing function, formula (5) satisfies

\[
f(n) < f(l) < f(1).
\]

(5)

When the number of hidden layers is even, that is, when \(n = 2k \in N_+\):
\[ \rho_{\text{max}} = f(1) = 1 - \int_{-\infty}^{1} \frac{1}{\sigma \sqrt{2\pi}} \exp\left(-\frac{(l - n/2)^2}{2\sigma^2}\right) \, dl = 1 - \left( \lim_{x \to -\infty} \frac{1}{2} \text{erf}\left(\frac{\sqrt{2} (-2l + n)}{4\sigma}\right) - \frac{1}{2} \text{erf}\left(\frac{\sqrt{2} (-2l + n)}{4\sigma}\right) \right) < 1, \]

(6)

\[ \rho_{\text{min}} = f(n) = 1 - \int_{-\infty}^{n} \frac{1}{\sigma \sqrt{2\pi}} \exp\left(-\frac{(l - n/2)^2}{2\sigma^2}\right) \, dl = 1 - \left( \lim_{x \to -\infty} \frac{1}{2} \text{erf}\left(\frac{\sqrt{2} (-2l + n)}{4\sigma}\right) + \frac{1}{2} \text{erf}\left(\frac{\sqrt{2} (-2l + n)}{4\sigma}\right) \right) > 0. \]

(7)

\[ \rho_{\text{max}} = f(1) = 1 - \int_{-\infty}^{1} \frac{1}{\sigma \sqrt{2\pi}} \exp\left(-\frac{(l - n + 1/2)^2}{2\sigma^2}\right) \, dl = 1 - \left( \lim_{x \to -\infty} \frac{1}{2} \text{erf}\left(\frac{\sqrt{2} (-2l + n + 1)}{4\sigma}\right) - \frac{1}{2} \text{erf}\left(\frac{\sqrt{2} (-2l + n + 1)}{4\sigma}\right) \right) < 1, \]

(8)

\[ \rho_{\text{min}} = f(n) = 1 - \int_{-\infty}^{n} \frac{1}{\sigma \sqrt{2\pi}} \exp\left(-\frac{(l - n + 1/2)^2}{2\sigma^2}\right) \, dl = 1 - \left( \lim_{x \to -\infty} \frac{1}{2} \text{erf}\left(\frac{\sqrt{2} (-2l + n + 1)}{4\sigma}\right) + \frac{1}{2} \text{erf}\left(\frac{\sqrt{2} (-2l + n + 1)}{4\sigma}\right) \right) > 0. \]

(9)

When the number of hidden layers is odd, that is, when \( n = 2k + 1 (k \in N) \):

From formulas (6)–(9), we can see \( df(l) \in (0,1), \forall l \). Therefore, the probability of each neuron being activated is between \((0,1)\).

Figures 1 and 2 show the image of the adaptive distribution function when \( \sigma = 1 \) and \( \sigma = 10 \).

When the adaptive distribution function is applied to the depth calculation model, a depth calculation model based on adaptive Dropout can be obtained. Figures 3 and 4 show the difference and connection between the basic depth calculation model and the depth calculation model based on adaptive Dropout.

Figure 3 shows a depth calculation model based on adaptive Dropout with three hidden layers and a total of 5 layers (input layer, hidden layer, and output layer). Among them, the activation probability of the neurons in the first hidden layer is 80% and the activation probability of neurons in the second and third layers is 50% and 40%, respectively.

We assume that \( L \) represents the total number of layers based on the adaptive Dropout depth calculation model, that is, the number of hidden layers is \( L - 2 \), \( l \in \{0, 1, \ldots, L - 1\} \) is the index number of each layer. That is, \( l = 0 \) indicates the input layer, and \( l = 1 \) indicates the first hidden layer. \( l = L - 1 \) represents the output layer. For the depth calculation model in which each layer is represented by an \( N \)-th order tensor, \( z_{j_1j_2 \cdots j_N}^{(l)} \) represents the output of the \( j_1j_2 \cdots j_N \)-th neuron of the \( l \)-th layer, and \( y_{j_1j_2 \cdots j_N}^{(l+1)} \) represents the output of the \( j_1j_2 \cdots j_N \)-th neuron of the \( l \)-th layer. At the same time, \( y^{(0)} = x \) represents the input data and \( y^{(L-1)} \) represents the output of the model. \( W^{(l)} \) and \( b^{(l)} \) represent the weight tensor and bias tensor of the \( l \)-th layer. Then, the forward propagation process of the basic depth calculation model is shown in formulas (10) and (11):

\[ z_{j_1j_2 \cdots j_N}^{(l+1)} = W^{(l)}_{a} \odot y^{(l)} + b^{(l)}_{j_1j_2 \cdots j_N} \left( \alpha = j_n + \sum_{i=1}^{N-1} (j_i - 1) \prod_{i \neq r} J_i \right), \]

(10)

\[ y_{j_1j_2 \cdots j_N}^{(l+1)} = f(z_{j_1j_2 \cdots j_N}^{(l+1)}). \]

(11)

where \( \odot \) represents the multipoint product of two tensors, \( H \in R^{x \times \times x \times x} \) \( (J_1 \times J_2 \times \cdots \times J_N = \alpha) \) represents the result of the multipoint product of tensor \( H \in R^{x \times \times x \times x} \) to \( g \) and tensor \( A \in R^{1 \times \times x \times x} \), that is, \( H = W \odot A \). Each element in \( H \) is defined as follows:

\[ h_{j_1j_2 \cdots j_N} = W_{\beta} \cdot A \left( \beta = j_n + \sum_{i=1}^{N-1} (j_i - 1) \prod_{i \neq r} J_i \right). \]

(12)

Among them, \( f \) is the activation function. The depth calculation model based on adaptive Dropout proposed in this paper uses the Sigmoid function as the activation function of the neuron, that is \( f(x) = 1/(1 + \exp(-x)) \).

For the depth calculation model based on adaptive Dropout, the forward propagation process is as shown in formulas (13)–(16):

\[ r_{j_1j_2 \cdots j_N}^{(l)} \sim \text{Bernoulli}(\rho^{(l)}). \]

(13)

\[ y_{j_1j_2 \cdots j_N}^{(l)} = r_{j_1j_2 \cdots j_N}^{(l)} \cdot y_{j_1j_2 \cdots j_N}^{(l)}. \]

(14)

\[ z_{j_1j_2 \cdots j_N}^{(l+1)} = W_{\alpha} \odot y^{(l)} + b_{j_1j_2 \cdots j_N}^{(l+1)} \left( \alpha = j_n + \sum_{i=1}^{N-1} (j_i - 1) \prod_{i \neq r} J_i \right), \]

(15)

\[ y_{j_1j_2 \cdots j_N}^{(l+1)} = f(z_{j_1j_2 \cdots j_N}^{(l+1)}). \]

(16)

Among them, \( \rho^{(l)} \) represents the activation probability of each hidden layer neuron in the first layer, and \( r_{j_1j_2 \cdots j_N}^{(l)} \) obeys the Bernoulli distribution and takes the value 1 according to the probability \( \rho^{(l)} \). From the perspective of the depth calculation model based on adaptive Dropout, the activation probability of each hidden layer neuron is set through an adaptive function, and each training obtains a submodel of the basic depth calculation model. The adaptive Dropout
model improves the generalization ability of the deep computing model by training multiple submodels that share weights.

The training process based on the adaptive Dropout depth calculation model is the same as the training process of the basic depth calculation model. In the pretraining process, it uses the principle of automatic coding to train the parameters of each hidden layer from the bottom up to obtain the initial parameters. In the fine-tuning process, it uses labeled supervision examples to fine tune the parameters from top to bottom.

It is assumed that there are \( m \) instances in the training dataset. Among them, \( x \) represents one of the instances. For the \( l \)th hidden layer (the second hidden layer in Figures 2 and 3 is taken as an example), the corresponding high-order automatic coding model of the basic depth model and the high-order automatic coding model based on the adaptive Dropout model are shown in Figures 5 and 6.

The reconstruction error function is shown as follows:

\[
J_{TAE}(\theta;l) = \frac{1}{2} \left( h_{W,b}(\tilde{y}^{(l-1)}) - \tilde{y}^{(l-1)} \right)^T G(h_{W,b}(\tilde{y}^{(l-1)}) - \tilde{y}^{(l-1)})
\]

(17)

Among them, \( \theta = \left\{ W^{(l-1)}, b^{(l-1)}; W^{(l-1)}, b^{(l-1)} \right\} \) is a parameter, and \( \tilde{y}^{(l-1)} \) is the expansion vector corresponding to the output tensor of the activated neuron in the 1-1th layer.

Similar to the basic depth calculation model, the depth calculation model based on adaptive Dropout uses gradient descent to update the parameters of the model. However, for each step of the training process of the depth calculation model based on adaptive Dropout, the forward propagation
and back propagation are trained on a submodel set by the adaptive distribution function. Therefore, when calculating the parameter gradient, only activated neurons are calculated.

It can be seen from the algorithm process that the main step of the algorithm is to calculate the partial derivative of the objective function with respect to the parameters. Therefore, the overall complexity of the algorithm is $O(M \times \prod_{t=1}^{l} I_t \times \prod_{s=1}^{l-1} J_s \times k)$. Among them, $M$ represents the number of training samples, $\prod_{t=1}^{l} I_t$ and $\prod_{s=1}^{l-1} J_s$ represent the number of neurons in the input layer and hidden layer, respectively, and $k$ represents the number of iterations.

4. Financial Shared Service Center of Agricultural Enterprise Group Based on Big Data Technology

The financial sharing center has a relatively obvious effect on improving the traditional financial control mode, can meet more needs of enterprise management, and is in line with the development trend of today's technological progress. The establishment of a financial sharing model has become a mainstream means for large enterprises to optimize financial control. However, people have some misunderstandings about building a financial sharing center. The most common misunderstandings are as follows. First, any enterprise can achieve data and process standardization by establishing a financial sharing center. Second, the establishment of a financial sharing center will effectively reduce the financial cost of the enterprise. Therefore, before constructing a financial sharing center, enterprises must clarify the types of enterprises and the scope of business they are applicable to. Moreover, enterprises need to rationally analyze whether they are applicable to the financial sharing model based on their own organizational structure, operating conditions, and business types.

The financial sharing center is a relatively centralized financial control model, which can correct the problems caused by the excessive decentralization of power of the group company. The headquarters of the group company have strong control and supervision powers over the core financial business, and arrange and allocate the economic resources within the group. For noncore financial businesses, member companies also have certain financial powers, but they need to strictly abide by unified standards and process guidelines in decision-making and implementation, and do not violate the overall strategic goals of the group. One of the types of enterprises that the financial sharing center is suitable for is a large cross-regional or multinational company. This type of enterprise has complex organizational structures, a wide geographical range of institutions, and large differences in policy, economic, and cultural backgrounds. There are certain difficulties in the process of implementing management and control. In large-scale trans-regional or multinational companies, each business unit independently conducts noncore and repetitive financial operations, which will cause a lot of redundancy in business departments and business personnel. Due to the geographical distribution of institutions, the parent company needs to implement remote management, which is less timely, difficult to play an effective role, and more difficult to manage. The differences in policies, economics, and humanities make it difficult for the overall policies and goals of the enterprise group to be effectively implemented. The business volume of manual adjustment is huge, and it is difficult to truly achieve unified management. The establishment of a financial sharing center can help this type of enterprise solve the above-mentioned problems and difficulties. Through the integration of noncore and repetitive financial services, cross-regional remote network management, financial data search, calculation, and switching
functions, it will help such enterprises to improve work efficiency, control management costs, and strengthen parent company supervision functions, ensure the implementation and implementation of group policies, and also ensure the quality of financial information and timely feedback. Another type of enterprise that the financial sharing center applies to is enterprise groups that frequently undergo mergers and acquisitions, reorganizations, and organizational changes. In the process of mergers, reorganizations, and organizational structure changes, such enterprises need to establish, merge, or cancel related business departments many times. Frequent changes make the management more difficult for enterprises, and they are prone to negligence and loopholes. The establishment of multiple complete functional department systems will lead to various cost increases. The staff expends a lot of energy on the handling of the basic financial business of various changes, which restricts the formulation and execution of business plans and goals. The establishment of the financial sharing center, through its integration function, eliminates the need to separately establish a complete financial system for them when new businesses or new institutions are established, which can reduce the management difficulty. The rapid transmission of information within the central system can also help companies promote the rapid integration of new businesses.

The specific functions of the financial sharing center can be divided into accounting center, reimbursement center, and settlement center. The business of the accounting function includes payable management, receivable management, fixed asset management, and accounting management. The business of the reporting function includes electronic payment, electronic reporting, and electronic files. The business of the settlement function includes fund planning, credit financing, fund monitoring, fund

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**Figure 7:** The functional scope of the financial sharing center of agricultural enterprise groups.
scheduling, and fund revenue and expenditure. Enterprises can gradually expand the scope of shared business based on the business they are concerned about, and finally form an integrated application of centralized accounting, centralized accounting, and centralized settlement, as shown in Figure 7.

The establishment of the process and system of the financial sharing center involves the internal financial process and related business processes, and they need to be unified planning and reasonable adjustments. In this link, companies need to rely on the ERP system to achieve. The process and system are composed of four parts: process specifications, job responsibilities, management methods, and assessment methods. Among them, the process specification mainly describes the main business process, operation process, and approval specification. Job responsibilities are to regulate the specific responsibilities and operational requirements of each position on the assembly line. The management method is to provide for the supporting systems for employee accounts, accounting file management, etc.; the assessment method is a method for evaluating and assessing the operation and effectiveness of the financial sharing center. The construction of the financial sharing center is essentially the optimization and re-engineering of business processes. The business processing flow of the financial sharing center covering a complete range of functions is shown in Figure 8. The three major functional centers complete the corresponding business processing according to their professional division of labor.

This paper constructs the above-mentioned agricultural enterprise group financial shared service center based on big data technology, and then verifies the performance of the system. First of all, this article evaluates the agricultural financial data processing and agricultural financial data storage of the system, and the results are shown in Table 1 and Figure 9.

From the above chart analysis, it is not difficult to conclude that the big data agricultural enterprise constructed in this article has good data processing and data storage effects according to the financial shared service system. After that, this article evaluates the financial sharing effect of the system and evaluates the data security, and the results shown in Table 2 and Figure 10 are obtained.

Figure 8: The overall business process of the financial sharing center of the agricultural enterprise group.
From the above test results, the financial shared service system of agricultural enterprise groups based on big data technology constructed in this paper has good performance and good practical effects.

Table 1: Evaluation of agricultural financial data processing and storage of agricultural financial data.

| Number | Data processing | Data storage |
|--------|----------------|--------------|
| 1      | 94.89          | 96.96        |
| 2      | 96.20          | 96.75        |
| 3      | 97.06          | 98.21        |
| 4      | 96.40          | 97.88        |
| 5      | 97.91          | 98.94        |
| 6      | 97.70          | 97.69        |
| 7      | 93.95          | 96.08        |
| 8      | 93.44          | 98.32        |
| 9      | 97.24          | 96.03        |
| 10     | 95.54          | 96.27        |

Table 2: Evaluation of the practical effect of the financial sharing system.

| Number | Shared evaluation | System security |
|--------|------------------|-----------------|
| 1      | 85.90            | 97.80           |
| 2      | 88.59            | 97.37           |
| 3      | 87.67            | 97.21           |
| 4      | 90.25            | 97.93           |
| 5      | 85.72            | 98.58           |
| 6      | 89.34            | 97.09           |
| 7      | 87.62            | 97.76           |
| 8      | 82.79            | 98.92           |
| 9      | 88.41            | 97.55           |
| 10     | 86.21            | 97.63           |

5. Conclusion

The advantage of the financial sharing model of agricultural enterprise groups is that it achieves the reduction of operating and management costs under the effect of scale, the improvement of financial management level and efficiency, and the improvement of the core competitiveness of enterprise groups. First of all, the establishment of the financial sharing center of the agricultural enterprise group enables the agricultural enterprise group to reduce the number of financial personnel and middle management of the agricultural enterprise group while the overall business volume remains unchanged, which improves the work efficiency of employees and reduces operation and management costs. Secondly, the agricultural enterprise group financial sharing center adopts a unified standard, which simplifies the steps and processes of business processing. The grasp of the financial data and indicators of the agricultural enterprise group ensures the control of each member company. Moreover, with the support of the ERP system, it not only ensures the transmission and accuracy of information but also avoids the omission of information, thereby improving the level and efficiency of the financial management of agricultural enterprise groups. Third, after the establishment of the financial sharing center, corporate managers can focus on higher-value core businesses, provide external customers with paid financial services, and create new economic growth points for the company.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The author declares that there are no conflicts of interest regarding this work.
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