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Research Article

Transaction Method of Warehouse Sharing Platform Based on Blockchain Technology

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ABSTRACT

With the continuous development of big data and blockchain technology, there are more applications of warehousing sharing platform, and warehousing transaction method has become the research focus. The original barter method can not solve the problem of accurate warehousing transactions, and the calculation accuracy of warehousing transactions is poor. Therefore, this paper proposes a warehouse transaction model based on blockchain technology, and comprehensively analyzes the form and accuracy of warehouse transactions. Firstly, the warehouse trading platform is used to count the transaction data and transaction methods, and the transaction forms and results are judged according to the warehouse characteristics, and irrelevant transaction information is abandoned. Then, according to the change rate of transaction data and transaction mode, the results are calculated, and compared with the actual transaction situation, and the parameters and indicators of transaction calculation are adjusted. MATLAB simulation test analysis shows that blockchain calculation method can improve the accuracy of warehousing transactions, and the accuracy rate reaches 95.3%. According to different transaction contents, the platform and form are judged, and the transaction time is calculated. It is found that the blockchain calculation method can meet the needs of warehousing transactions.

Keywords: Warehousing Platform, Blockchain, Calculation Method, Platform.

INTRODUCTION

Blockchain technology realizes secure transactions in the form of continuous data storage [1], data encryption [2], and data chain relationships to meet complex data analysis needs [3]. At present, with the assistance of the warehousing trading platform, the transaction of goods can better calculate the transaction results and provide a perfect direction for the trading method [4]. However, the warehousing trading platform cannot achieve high-precision calculation [5], mainly because the data structure is complex, and the server lacks sufficient computing power [6]. Therefore, scholars at home and abroad attach great importance to the application of blockchain computing methods, and integrate the method with the warehouse sharing platform to promote the improvement of transaction level. According to the survey data from 2020~2022 [7], blockchain technology can improve the level of warehousing transactions, accounting for 20.36%, while the sharing platform in warehousing transactions can increase the transaction volume by 35.2%. However, in the actual warehousing transactions, the satisfaction rate and security of the sharing platform are poor, indicating that the platform has shortcomings and needs to be further improved [8]. Therefore, finding an effective trading method and improving the accuracy of warehousing transactions is a problem that needs to be solved in goods transactions [9]. At present, although warehousing transactions have established their own transaction databases and realized the statistics of goods, the security problems of transactions, the comprehensive analysis of transaction data, and the problems of warehousing sharing still exist, and the warehousing sharing platform cannot accurately analyze the transaction methods. Since transaction analysis includes block encryption, structure processing, data analysis [10], correlation analysis, etc., and the transaction information contains complex data forms, the server needs to have high computing power to achieve. Therefore, in the massive transaction data, the comprehensive analysis and analysis of transaction information with the warehouse sharing platform, combined with the data review of the warehouse sharing platform, can achieve efficient warehousing transactions, and the specific operation results are shown in Figure 1.

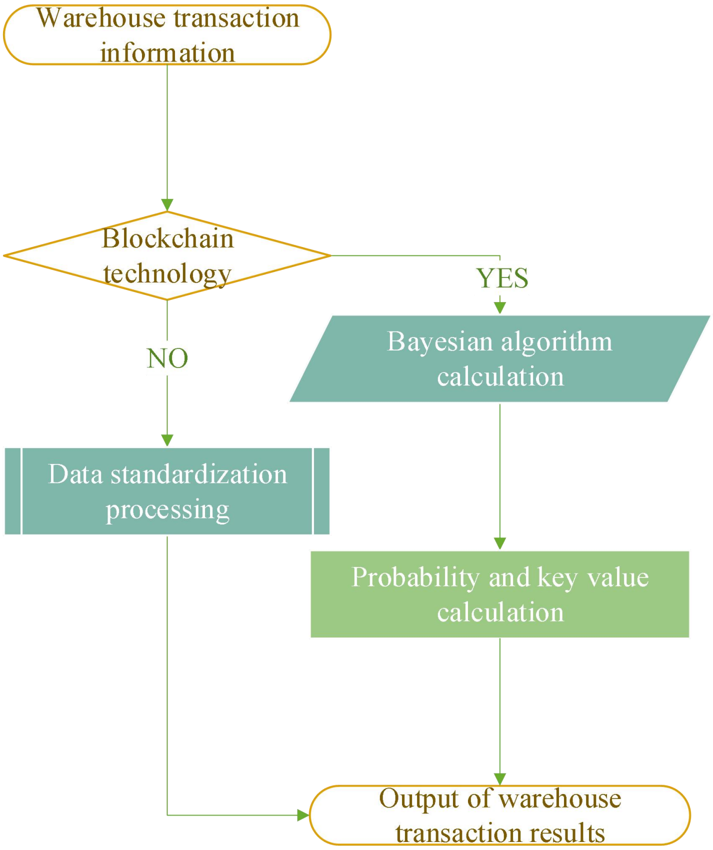

Figure 1. The Process of Comprehensive Analysis of Transaction Information by Blockchain Computing Method

The blockchain computing method has the advantages of strong computing power and processing security [11], which can realize the comprehensive judgment of transaction content and transaction process, and combine with Bayesian algorithm to verify and calculate cargo data to achieve comprehensive verification of transaction information [12]. At the same time, in-depth mining is carried out on the data of the warehousing platform to verify its transaction content, transaction amount, and accuracy of warehousing transactions. Some scholars combine the blockchain calculation method with the logical calculation method, and apply it to the calculation of the comprehensive calculation of transaction information, and try to match the design parameters. The results prove that the blockchain computing method and intelligent algorithm can analyze the data of the warehousing platform, extract the hidden key, transaction details and other data, and meet the actual transaction needs of warehousing. Blockchain computing methods belong to the comprehensive reflection of computer technologies such as cloud computing, cloud platform, and big data, which are widely used in auditing, economics [13], management and other fields, but there are problems such as hacker attacks and channel blockages in the calculation process, and it is impossible to quantitatively calculate warehousing. At the same time, although the blockchain computing method can handle different transaction data, the correlation, simplification calculation, and coupling computing capabilities between the data are low, and the preliminary processing of warehousing data can only be completed. In addition, the blockchain calculation method retrieves the data in the standard cargo database, and combines intelligent algorithms to comprehensively predict the transaction information, the specific content is mainly as follows: Clarify the transaction information in the warehousing sharing platform, including: warehousing time, cargo information, cargo number, etc. [14], and confirm the transaction content according to the warehousing database, cargo information database, etc. Then, record the warehousing cargo data transaction content, transaction method, warehousing content, and warehousing characteristics points; Compare the trading results with other methods, compare the storage characteristics of different methods, as well as trading points, etc., and quantify the transaction content according to the above constraints to improve the comprehensive calculation of the design [15]. However, when warehousing transactions, it is greatly affected by external interference and subjective factors, and the comprehensive prediction of transaction information cannot be realized. Moreover, the data design of the warehousing platform is highly complex and involves many feature points, and the blockchain calculation method cannot simplify the cargo data and transaction data, and the whole design process is relatively complicated [16]. Integrate with other intelligent algorithms, such as mountain climbing algorithms, improved particle swarms, etc., to realize the quantification of transaction information, simplify massive data, improve the accuracy and rationality of warehousing transactions, and give full play to the advantages of blockchain computing methods [17]. In summary, although the warehouse sharing platform can initially screen the cargo data, the overall transaction results are not satisfactory[18], and it cannot achieve massive and frequent data verification, and the intelligent algorithm can make up for the shortcomings of the warehouse sharing platform. Based on this, this paper integrates the blockchain calculation method with the intelligent algorithm to comprehensively predict the transaction information, identify the characteristic quantities such as cargo information [19], cargo number, and hidden key, and obtain the result set of comprehensive calculation to complete the mining and calculation of transaction information.

LITERATURE REVIEW

Blockchain Calculation Method

The blockchain calculation method can collect transaction content data, warehousing data, and cargo information, and calculate the data probability through Bayesian algorithm, compare the correlation and logic of different data, and find the most relevant indicators. The combination of blockchain computing method and Bayesian algorithm can filter out key data values from massive cargo data and realize the preliminary collection of warehousing transaction data. The blockchain computing method can simplify the transaction data, cargo numbered cargo data, and warehousing platform data in the warehousing design to build key transaction classes. In order to calculate more accurately, the implementation conditions, trading environment, and constraints of the warehouse sharing platform are constructed, and the results are as follows.

Data collection of the warehouse sharing platform: the transaction content is x_{ij}, the server node is y_i, the server response rate is H_i, the transaction correlation function is k, the transaction frequency is $JC(x_i \otimes x_{i-1})$, and the data collection process of the warehouse sharing platform is shown in Equation (1).

$$ral(k) = \sum x_{ij} \otimes y_i \times k \cdot 100 \cdot H_i \quad (1)$$

$rand(\sum x_i)$ is a random calling server number; $\overline{x_{ij}} \geq \max \sum x_{ij} \cdot H_i$, whose value is a constraint.

Transaction information processing: the warehouse sharing function is $f_1(x \cdot k) \cdot f_2 \cdots f_n \cdot H_i$, the identity verification function is $f(x_{ij}) \in \sum x_{ij} \approx 1$, and the transaction information processing process is shown in Equation (2):

$$\sum_{y_{ij}} f(x) = \overline{y'} \cdot \sum x_i \cdot k \quad (2)$$

Bayesian probability calculation: The probability is $\sum x_{it}$, the child-parent node function is $ZF(x)$, and the Bayesian calculation is shown in Equation (3).

$$ZF(x_{ij}, y_{ij}) = \frac{\zeta_{ii} + (x_i \otimes x_{i+1})'}{y_{ij}} \cdot H_i \quad (3)$$

METHODOLOGY

Correlation of Warehousing Data

There is a certain correlation between warehouse data, and the transaction forms are diverse, and the transaction content is cross-changing, so it is necessary to simplify the warehousing data and determine the data relationship and key data. In addition, hacker attacks, user losses and other problems have a negative impact on the transaction results, so the correlation between transaction data should be calculated to realize the correlation analysis of warehousing data, the specific process is shown in Figure 2.

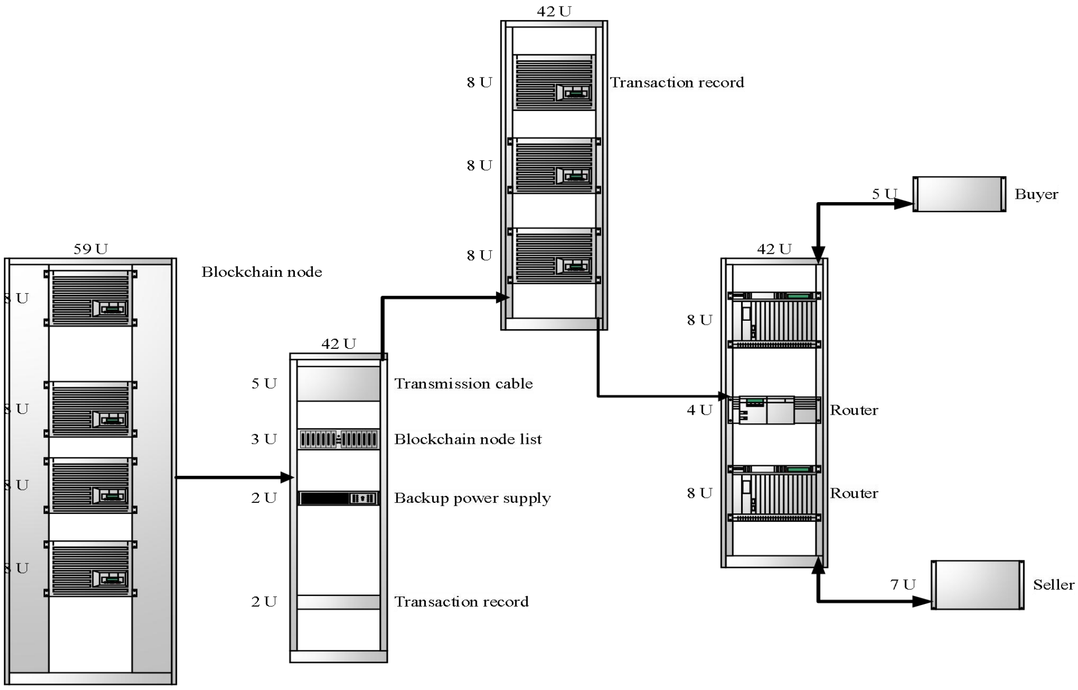

Figure 2. The Process of Obtaining Data from the Warehouse Sharing Platform

The results show that the standardized processing of transaction information data is uniform, the distribution points are relatively discrete, and the data is changed frequently, indicating that the transaction of the warehousing platform is more frequent and the transaction volume of goods is large. Among them, the data such as transaction mode, hidden key, and cargo number account for a large proportion, which further indicates that the data of the warehouse sharing platform presents a trend of sea quantification, which needs to be standardized processing, and the standard processing results are shown in Table 1.

Table 1. Bayesian Probability Calculation Of Warehousing Data

Index / Probability Level (%)	Transaction Content	Transaction Information	Hide the Key	Volume of Goods	Total Probability
5	90.03	86.52	88.43	73.75	79.67
10	85.44	83.10	87.47	77.42	90.53
15	82.77	82.05	88.56	85.90	74.63
20	71.35	81.95	71.94	84.90	80.28
25	75.06	83.82	79.18	75.91	83.64
30	73.62	79.45	82.46	81.57	84.86
35	91.82	85.23	85.23	84.68	87.60
40	77.68	77.70	84.77	80.44	92.17
45	80.80	91.60	76.85	81.13	85.65
50	90.07	78.25	77.54	83.48	77.42
55	82.61	83.38	72.33	91.41	90.99
60	70.69	82.00	84.96	88.66	92.29
65	82.03	73.76	77.13	90.77	77.59
70	82.34	82.62	71.85	81.16	80.40
75	83.32	81.06	73.60	72.98	77.84
80	77.29	79.68	83.87	74.98	86.98
85	82.33	90.49	78.92	90.83	72.15
90	75.32	91.92	76.66	92.16	90.14
95	82.09	90.75	86.78	75.27	72.69
100	83.27	91.26	85.04	74.85	78.25

From the Bayesian probability calculation results in Table 1, it can be seen that the data in the warehouse sharing platform has a high probability, and the probability distribution is integrated, which verifies that the warehouse data structure is not only reasonable, but also has a large amount of data. The data in Table 1 was analyzed by summary rows to obtain the overall statistical results, and the results are shown in Table 2.

Table 2. Statistical Analysis Of Warehousing Data

Random Sample	Percentage of Data Collected by Blockchain Computing Method (%)		Data Conversion Rate(%)		Bayesian Probability Calculation
	Structure Data	Unstructured Data	Standard Rate	Probabilistic Bias	
74	85.05	14.95	65.81	5.18	0.94
38	51.46	48.54	63.26	4.49	0.93
26	40.76	59.24	45.92	4.20	0.84
67	32.11	67.89	61.71	3.64	0.90
75	52.8	47.20	93.49	6.00	0.87
45	42.69	57.31	1.14	5.37	0.85
30	19.32	80.68	46.23	5.74	0.88
67	62.84	37.16	68.10	5.93	0.80
20	67.13	32.87	55.93	5.17	0.96
66	42.33	57.67	45.18	5.58	0.99
41	73.96	26.04	46.23	5.68	0.92
37	44.71	55.29	46.32	2.23	0.99
74	68.02	31.98	44.50	7.06	0.87

From the transaction information data in Table 2, it can be seen that the standard rate of all transaction information data is high, the probability deviation is less than 8%, and the Bayesian probability is greater than 80%. In addition, the proportion of unstructured data is high, which further indicates the effectiveness of warehousing data processing.

Selection of Warehousing Trading Methods

There are three main methods of warehousing transactions based on blockchain technology, namely unilateral transactions, two-party transactions, and third-party guarantees. The mathematical description of the above 3 trading methods is as follows.

The calculation of a one-party transaction is shown in Equation (4).

$$sof(x_{ij}) = \int_{i=1}^{n} \sum \overline{x_{ij} \otimes y_{ij}} \quad (4)$$

The calculation of the transaction between the parties is shown in Equation (5).

$$douf(x_{ij}) = \frac{k \cdot \sum \overrightarrow{x_{ij}} \cap \overleftarrow{y_{ij}}}{H_i} \quad (5)$$

The calculation of third-party guarantees is shown in Equation (6).

$$thirf(x_{ij}) = \begin{cases} sof(x_{ij}), \sum x_{ij} > \sum y_{ij} \\ douf(x_{ij}), \sum x_{ij} < \sum y_{ij} \end{cases} \quad (6)$$

For the above analysis, the warehousing transaction methods of blockchain technology are compared, and the results are shown in Table 3.

Table 3. Comparison of Results of Different Warehousing Trading Methods

Different Methods	Random Sample	Degree of Relevance	Verify
One-Party Transactions	10	78.25	Qualified
	84	72.52	Qualified
	68	75.89	Qualified
	87	76.36	Qualified
Transactions between the Parties	10	76.94	Qualified
	84	73.14	Qualified
	68	70.98	Qualified
	87	78.02	Qualified
Third Party Warranties	10	78.07	Qualified
	84	76.07	Qualified
	68	65.36	Qualified
	87	70.84	Qualified

Table 3 shows that the number of warehousing transactions in unilateral transactions, two-party transactions, and third-party transactions varies randomly, and the direction of change meets the design requirements. At the same time, the frequency of data change is less than 20%, which further shows that after standardized processing, the stability of warehousing transaction data is enhanced, and the later warehousing transaction method verification can be carried out.

Comprehensive Judgment of Warehousing Transactions

The warehousing transaction method based on blockchain technology can be used jointly, combined with the transaction content, transaction form, and hacker interference factors, and the joint calculation of multiple methods is carried out, and the specific results are as follows.

The transaction method of unilateral joint parties is calculated as shown in Equation (7).

$$sil(x_i) = \sum_{y_{ij}} sof(x_{ij}) \cup douf(x_{ij}) \cdot k \quad (7)$$

The transaction method of unilateral joint third party, calculated as shown in Equation (8).

$$dof = sof(x_{ij}) \cup thirf(x_{ij}) \cdot \frac{k}{H_i} \quad (8)$$

The transaction method of the two parties and the third party, calculated as shown in Equation (9).

$$y_3(x_t) = sof(x_{ij}) \cup thirf(x_{ij}) \cup douf(x_{ij}) \cdot H_i \quad (9)$$

The optimization of the warehouse sharing platform by hamster trading method based on blockchain technology is mainly manifested in several aspects: on the one hand, the data in the warehouse sharing platform is calculated, the data association process is analyzed, and the structure of the data is optimized; On the other hand, Bayesian probability calculation is carried out on the platform to simplify the complexity of data, reduce the amount of data, and realize the comprehensive processing of cargo information. Finally, through continuous observation of transaction content, transaction form and calculation results, the comprehensive calculation set of warehousing trading methods is obtained, and the results in the collection are verified.

Transaction Method Selection Process of Warehouse Sharing Platform Based on Blockchain Technology

After the Bayesian algorithm is processed, the warehousing platform of blockchain technology needs to verify the transaction information, check the cargo information and cargo number, and dig deep into the above information content, and the specific selection process is shown in Figure 3.

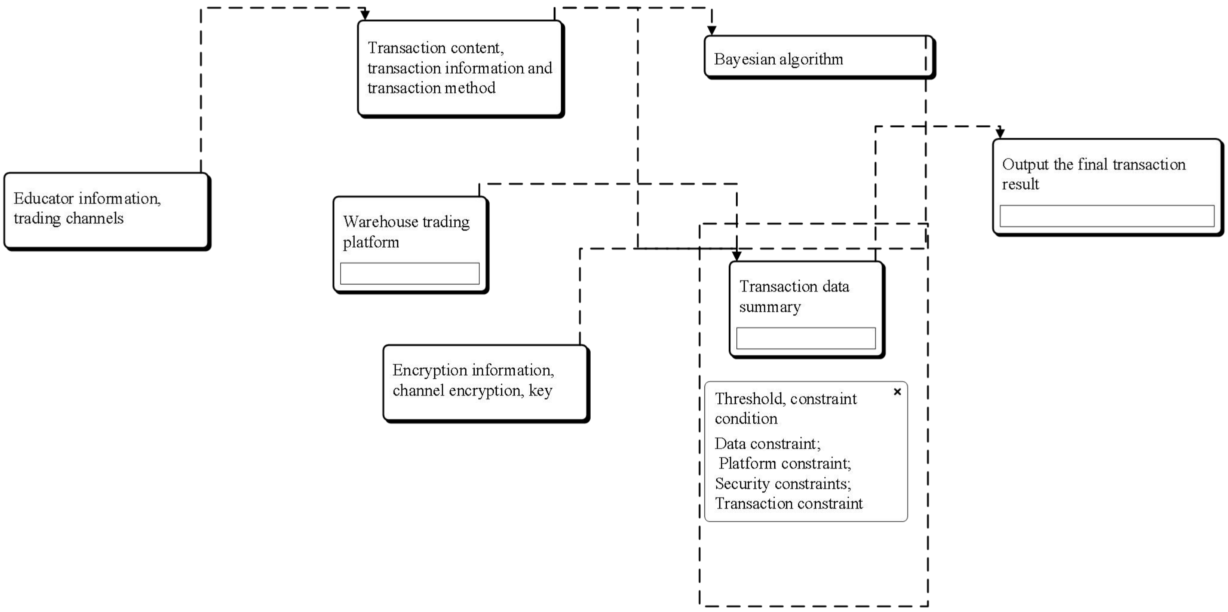

Figure 3. Transaction Process of Warehouse Sharing Platform Based on Blockchain Technology

Step 1: The nature of the warehouse sharing platform, comprehensive warehousing data, correlation calculation according to the content of warehousing data, and then form a standard information collection for warehousing sharing. At the same time, the constraints of standardized warehousing data, transaction content and blockchain technology are set to complete the preprocessing of relevant data.

Step 2: Analyze the correlation and discreteness of relevant data, and record the direction of change of warehousing transactions.

Step 3: Build a warehousing transaction function, and use blockchain technology to understand the transaction content, transaction method, server number, cargo number, etc., as well as the information of the access server. At the same time, by setting the weight and threshold of the transaction, the key value of the warehousing transaction is determined, and the comprehensive calculation of the warehousing transaction is completed.

Step 4: Calculate the maximum value of the trading method, as well as the relevant storage information and mining results. According to the warehousing transaction volume, cargo data and cargo number, calculate the storage transaction method with the highest probability.

Step 5: In the case of conditional constraints and initial value constraints, the comprehensive calculation of warehousing information and the verification of transaction methods are carried out.

Step 6: Comprehensive prediction of warehousing transactions, determine the accuracy, rationality, data simplification rate, complexity, etc. of warehousing transactions.

Step 7: After all the data in the transaction data set is traversed, record the outlier values and redundant information in the transaction, and repeat steps 2~6.

RESULTS AND DISCUSSION

Transaction Cases of Warehouse Sharing Platform Based on Blockchain Technology

Transactions of the Warehousing Platform

Taking the warehousing trading platform based on blockchain technology as an example, this paper calculates 12,3222 warehousing goods to obtain data such as the number, content, transaction method, and transaction frequency of the goods in the platform. The storage transaction time is based on 2020, 2021 and 2022, and MATLAB software and standardized processing software are analyzed, and the calculation results are shown in Table 4.

Table 4. Transactions of Warehousing Platforms

Source of Information	Transaction Content	Transaction Randomness	Data Volume(M)	Frequent Transactions (%)
Cargo Information	Numbering	Random	5460.75	0.46
	Inbound and Outbound Time	Directional	5644.69	0.96
	Source of Goods	Random	3266.50	0.03
	Type of Goods	Random	6239.06	0.91
	Cargo Circulation Trajectory	Random	7435.69	0.94
	Cargo Security	Random	1768.97	0.64
Transaction Information	Traders	Random	5916.15	0.01
	Transaction Method	Random	1959.45	0.32
	Transaction Content	Random	7896.32	0.75
	Trading Level	Random	8251.36	0.93
	Frequency of Transactions	Directional	1513.53	0.44
	Trading Volume	Directional	2632.72	0.32
Encrypt Information	Dedicated Encryption	Random	6978.16	0.69
	Encryption in its Entirety	Random	3908.04	0.32
	Stage Encryption	Directional	7952.65	0.50
	Encryption in Transit	Directional	8294.38	0.93
Defense Information	Firewall	Directional	690.02	0.93
	Translated	Random	1669.01	0.33
	Audit	Random	5547.38	0.75

Comprehensive Warehousing Trading Methods

Comprehensive is an important indicator of warehousing trading methods, which can reflect the results of warehousing transactions, and the specific calculation results are shown in Table 5.

Table 5. Comprehensive Warehousing Transaction Methods

Different Trading Methods	Content	Index	Comprehensive Integration of Block Nodes	Comprehensive Trading Platform
Warehousing Transaction Method Based on Blockchain Technology	Encrypt Information	Encryption in Transit	86.58	84.26
		Encryption in its Entirety	82.44	84.29
		Dedicated Encryption	85.43	86.78
	Transaction Information	Traders	86.63	86.32
		Transaction Content	85.81	85.01
		Frequency of Transactions	85.52	86.37
	Transaction Content	Source of Goods	84.09	83.70
		Type of Goods	83.60	84.84
		Cargo Flow Trajectory	84.77	85.38
		Inbound and Outbound Time	85.37	81.92
		Cargo Security	82.25	80.70
Warehouse Sharing Platform	Encrypt Information	Encryption in Transit	84.73	87.17
		Encryption in its Entirety	83.97	86.91
		Dedicated Encryption	84.29	85.73

Different Trading Methods	**Content**	**Index**	**Comprehensive Integration of Block Nodes**	**Comprehensive Trading Platform**
	Transaction Information	Traders	85.17	84.26
		Transaction Content	82.90	81.21
		Frequency of Transactions	83.40	81.30
	Transaction Content	Source of Goods	87.44	86.60
		Type of Goods	84.36	87.10
		Cargo Flow Trajectory	85.94	88.57
		Inbound and Outbound Time	85.33	82.66
		Cargo Security	84.20	85.15
Warehousing Trading Methods	Encrypt Information	Encryption in Transit	87.99	82.82
		Encryption in its Entirety	86.58	84.26
		Dedicated Encryption	82.44	84.29
	Transaction Information	Traders	85.43	86.78
		Transaction Content	86.63	86.32
		Frequency of Transactions	85.81	85.01
	Transaction Content	Source of Goods	85.52	86.37
		Type of Goods	84.09	83.70
		Cargo Flow Trajectory	83.60	84.84
		Inbound and Outbound Time	84.77	85.38
		Cargo Security	85.37	81.92

The transaction process for the data in Table 5 is shown in Figure 4.

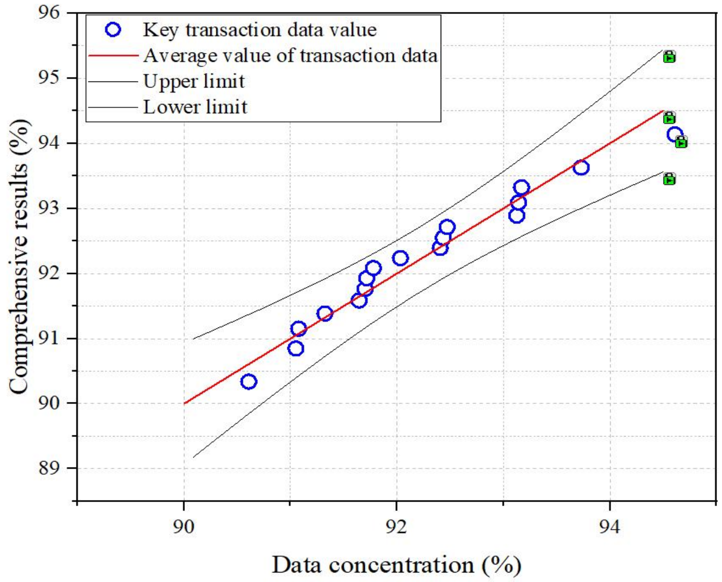

Figure 4. The Transaction Process of the Warehousing Platform

As can be seen from Figure 4, the transaction of the warehousing platform based on blockchain technology is stable, showing centralized and normal changes. In the whole process of change, the trading method of the warehousing platform reflects its own advantages in the data concentration, data volume, and data concentration. The reason is that the Bayesian algorithm calculates the probability of warehousing transaction content and trading methods, verifies data according to the calculated thresholds and constraints, eliminates redundant interference data and information below constraints, and realizes a small amount of data calculation of the warehousing platform.

Reduction Rate of Transaction Data in Warehousing Transactions

The simplified calculation of transaction data requires the identification of abnormal cargo data, multiple verification of the calculation results, and the elimination of redundant data in a circular manner, as shown in Table 6.

Table 6. Occurrence Rate of Anomalies in Warehousing Transactions

Number of Iterations	**Warehouse Sharing Platform**	**Block Server**	**Warehouses**	**Trading Users**	**Third Party**	**Overall Simplification Rate**
0~50 times	5.09	4.91	4.92	4.97	4.84	98.36
	5.01	5.09	5.09	4.91	4.89	85.22
51~100 times	5.13	5.00	5.16	4.98	5.17	92.75
	5.09	5.02	4.94	5.18	5.17	90.68

The simplification rate results for the transaction data in Table 4 are shown in Figure 5.

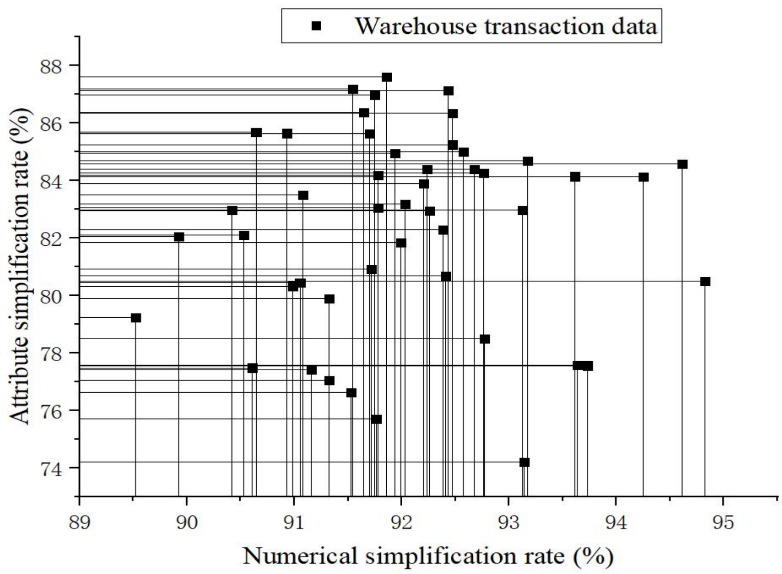

Figure 5. Change in the Reduction Rate of Transaction Data

It can be seen from Figure 5 that the occurrence rate of data outliers is low, and there is no cross or correlation between outliers, indicating that the number of rejections of outliers is only 1, and no repeated rejection is performed, which also indicates that the rejection effect of redundant data is better. At the same time, the distribution of outlier data is uniform, and there is no staged centralized elimination, indicating that the outlier data is reasonably eliminated. Due to the variety of data sources in Table 4, reasonable exclusion of abnormal data can lay the foundation for accurate calculation and reduce the interference of redundant data on results.

Correction Rate of Transaction Data in Warehousing Transactions

The correction rate is the verification index of warehousing transactions, and it is also the goal of the implementation of blockchain technology, and it is also the perfect content of the warehousing platform. The change in the correction rate of the warehousing transaction method is shown in Figure 6.

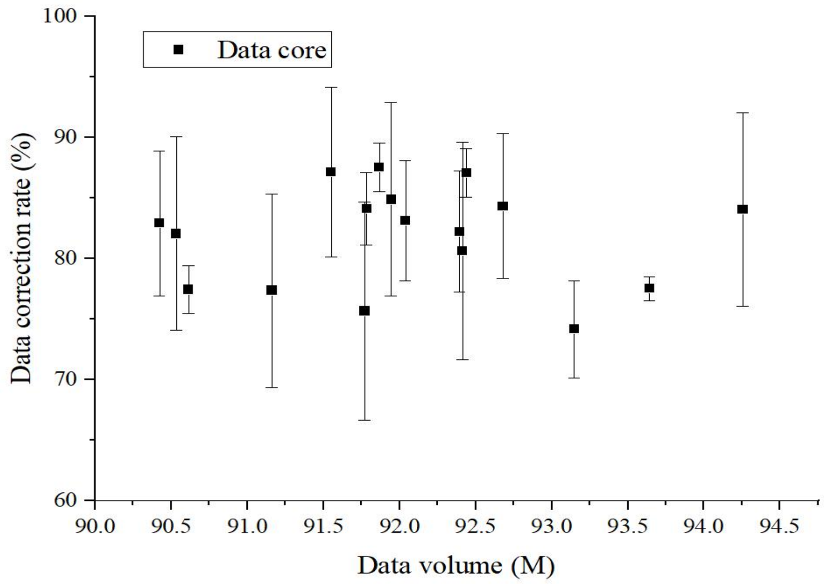

Figure 6. Correction Rate of Warehousing Transaction Data

It can be seen from Figure 6 that the correction rate of warehousing transaction data is relatively concentrated, and the correction direction of the data is random, and the center points are scattered, distributed and segmented, indicating that the correction data of warehousing transaction data conforms to the normal distribution. The transformation from any point to the correction direction, and the calibration results are concentrated, indicating that the blockchain technology can ensure the effective correction of the value. For the correction results of the storage data in Figure 6, the different methods are compared, and the results are shown in Table 7.

Table 7. Comparison of Warehousing Transaction Data Correction by Different Methods

Method	Content	Correction Rate	Correct the Direction
Warehousing Transaction Method Based on Blockchain Technology	Encrypt Information	85.91	Random
	Transaction Information	85.67	Random
	Transaction Content	89.93	Random
Warehouse Sharing Platform	Encrypt Information	83.77	Random
	Transaction Information	84.66	Random
	Transaction Content	84.41	Random
Warehousing Trading Methods	Encrypt Information	83.07	Random
	Transaction Information	84.76	Random
	Transaction Content	76.20	Random

Compared with the warehousing sharing platform and warehousing transaction method, the warehousing transaction method based on blockchain technology effectively corrects the transaction information, realizes the correction of encrypted information, transaction information and transaction content, and the correction direction is random. The reason for the above problems is that the warehousing transaction method based on blockchain technology can standardize the transaction data, set thresholds and constraints, and provide support for accurate verification in the later stage. In addition, the deep mining process will also iteratively proofread encrypted information, transaction information, and transaction content to ensure the reliability of the proofreading results. Due to the randomness of blockchain technology, there is also strong randomness in the proofreading process, which reduces the non-subjective factors in the proofreading process.

Accuracy of Storage Transactions

Accuracy is the main deficiency of the warehouse sharing platform, the important goal of blockchain technology implementation is to improve the accuracy of transactions, the following is the transaction accuracy proofreading, the results are shown in Figure 7.

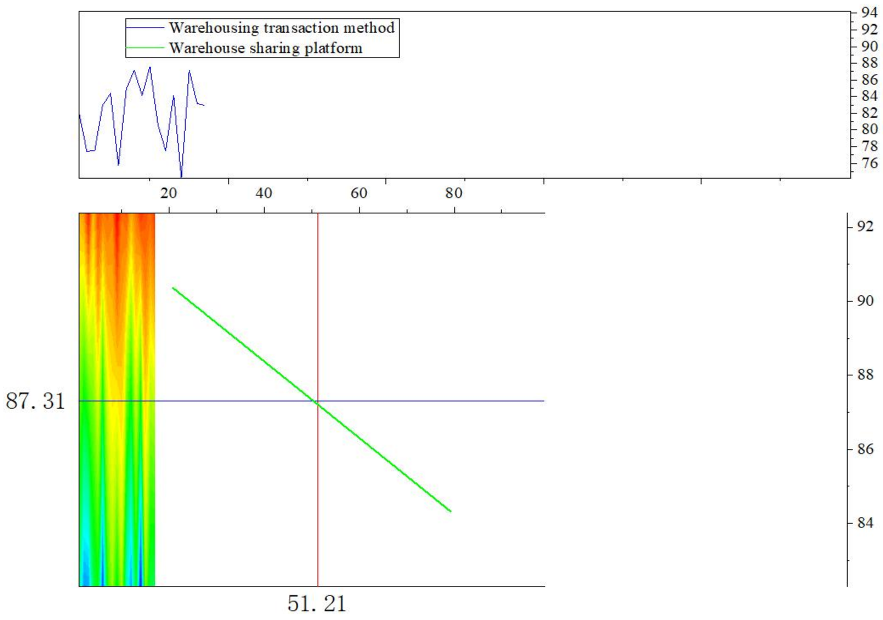

Figure 7. Different Warehousing Transaction Accuracy

It can be seen from Figure 7 that the warehousing transaction method based on blockchain technology can continuously integrate transaction data and continuously improve the coupling between data, so as to achieve the purpose of improving the accuracy of calculation. The above problems arise mainly because the data redundancy, complexity and data volume are greatly simplified, and the correlation between data is increased. The results of the warehousing transaction method are summarized below to obtain the final accuracy, as shown in Table 8.

Table 8. Accuracy Of Warehousing Transaction Calculations

Dig Deep	**Number of Samples**	**Verify the Amount of Data**	**Calculation Accuracy**
0~50 times	6	45142M	93.42%
51~100 times	8	55425 M	95.12%
Number of outliers/overall data = 12.96%		Overall fit = 98.36%	
Key value ratio = 95.72%		Data coupling = 85.32%.	
Redundant value rejection rate = 96.12%		Data correlation degree = 86.42%	
Theoretical value÷ actual value = 0.11%		Proportion of unstructured data = 65.32%.	
Test frequency = 152.42%		Data Validity = 86.35%	

It can be seen from Table 8 that in terms of calculation accuracy, the calculation results of warehousing transaction methods based on blockchain technology are high, with an accuracy of 93.42% in 0~50 excavations and 95.12% in 51~100 excavations. Moreover, the amount of verification data was 45142M and 55425M, respectively, the proportion of outliers, key values, and redundant values were rejected by more than 90%, the coupling, fitting, correlation and validity of the data were greater than 80%, and the non-structural data and test frequency were also high. On the whole, the method proposed in this paper is well implemented in terms of calculation constraints and data structure, which meets the actual requirements. The reason is that the warehousing transaction method based on blockchain technology standardizes and unstructured processing data, simplifies the complexity of data, reduces the amount of data, and provides a basic guarantee for warehousing transactions. The following random sampling analysis of different methods is shown in Table 9.

Table 9. Results of Random Sampling by Method

Number of Samples	Warehousing Transaction Content				Warehousing Transaction Information			
	Warehousing Transaction Method Based on Blockchain Technology	Warehouse Sharing Platform	Amplitu de	Difference	Warehousing Transaction Method Based on Blockchain Technology	Barter Law	Amplitu de	Difference
35	92.23	8 4.31	6	7.60	92.41	80.68	5	8.40
81	90.76	84.32	2	8.38	90.61	77.48	8	8.79
5	92.73	84.05	2	7.94	91.78	84.19	8	9.05
48	92.39	82.29	4	7.48	93.14	74.22	1	7.96
25	90.53	82.11	4	6.66	92.43	87.15	6	8.23
2	91.16	77.42	2	8.99	92.03	83.18	6	8.65
96	93.64	77.57	9	7.74	93.13	82.96	9	9.19
29	90.42	82.97	4	7.26	91.65	86.37	8	8.72
69	92.67	84.39	7	7.55	91.08	83.50	7	7.29
59	91.76	75.71	6	7.66	91.05	80.45	8	9.29
72	91.94	84.94	7	8.52	93.73	77.56	2	7.84
55	91.54	87.19	9	9.81	91.72	80.92	9	8.95

It can be seen from Table 8 that in terms of sampling accuracy comparison, the accuracy of warehousing transaction methods based on blockchain technology is low, and the accuracy of transaction content and transaction information is higher, which is better than that of warehousing sharing platforms. The reason for the above problems is that the warehousing transaction method based on blockchain technology and Bayesian algorithm are calculated with the transaction probability, giving priority to completing warehousing transactions with high probability, verifying warehousing transactions with low probability, effectively reducing the frequency of warehousing transactions and the interference of external factors on the results.

CONCLUSION

Aiming at the transaction problem of warehousing sharing platform, this paper proposes a warehousing transaction method based on blockchain technology, which combines Bayesian algorithm to calculate the probability of warehousing transaction data and constraints, and standardizes the transaction data to simplify the complexity of warehousing transactions. The research results show that the warehousing transaction method based on blockchain technology can improve the accuracy and comprehensiveness of transactions, reduce the proportion of redundant data, improve the simplification rate of transactions, and achieve 98.9% consistency with actual transaction results. However, in the calculation of warehousing transactions, there is a problem of non-structural classification standards of data, resulting in low differentiation of different structures and increasing the repetition rate of calculations.

ETHICAL DECLARATION

Conflict of interest: No declaration required. **Financing:** No reporting required. **Peer review:** Double anonymous peer review.

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