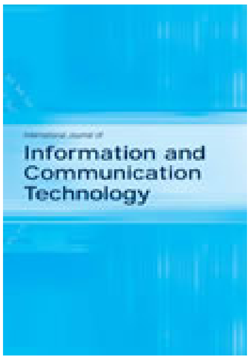


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# Site-selection method of agricultural products logistics distribution centre based on blockchain

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# Site-selection method of agricultural products logistics distribution centre based on blockchain

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**Abstract:** In order to overcome the problems of low on-time delivery rate and high distribution cost existing in the existing location methods of agricultural products logistics distribution centre, this paper proposes a new location method of agricultural products logistics distribution centre based on blockchain. Based on the analysis of the basic problems affecting the location of agricultural products logistics distribution centre, combined with the blockchain technology, the location model of agricultural products logistics distribution centre based on input-output ratio was constructed. Combining the idea of mountain climbing algorithm and particle swarm optimisation algorithm, the hybrid particle algorithm is used to solve the location model of agricultural products' logistics distribution centre, and the optimal location scheme is obtained. The experimental results show that the proposed method can effectively improve the on-time delivery rate, customer satisfaction, and reduce the logistics distribution costs. The maximum on-time delivery rate is 97.4%.

**Keywords:** blockchain; agricultural products; logistics distribution centre; site-selection method; hybrid particle swarm optimisation algorithm.

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## 1 Introduction

With the rapid development of China's logistics industry, the agricultural products logistics problems in various cities and towns arouses extensive attention of local governments. The relevant government departments formulate the strategies to promote the development of China's logistics from different angles. At the same time, some government departments focus on planning the development of logistics industry in their regions, and give specific policies and measures (Zhang et al., 2019). At present, the logistics distribution system of agricultural products has not been fully formed, and the distribution centres in various regions are very uneven. Most of the agricultural products sold by enterprises and individuals are purchased and sold from the wholesale market of agricultural products. At present, due to the inability to accurately analyse the factors affecting the location of logistics distribution centre, the distribution cost is increased, the customer satisfaction and the on-time delivery rate are low. Therefore, it is of great practical significance to study an effective site-selection method of agricultural products logistics distribution centre.

Relevant scholars focus on the study of the site-selection of agricultural products logistics distribution centre. Li and Pan (2017) propose a site-selection method of agricultural products logistics distribution centre based on the hybrid model of DEA and AHP. Through DEA, the relative efficiency coefficient of different schemes is calculated, and the judgement matrix is constructed. Through AHP, the total ranking of different schemes is realised, and the effective location scheme of agricultural products logistics distribution centre is obtained. However, this method has the problem of low delivery rate on-time. In Wang et al. (2017b), in order to solve the combined site-selection decision-making problem of agricultural product distribution centre and multi centre vehicle routing optimisation with time window, the site-selection method of agricultural products logistics distribution centre based on the two-layer planning method is proposed. and the multi-objective integer programming model of distribution centre location and vehicle routing arrangement is established by using the two-level heuristic algorithm according to the characteristics of the model. The solution can effectively realise the site-selection method of logistics distribution centre, but the distribution user satisfaction of this method is low. Zhu (2017) proposes the site-selection method of agricultural products logistics distribution centre based on genetic algorithm, to construct the site-selection model of distribution centre cost minimisation, and design a variety of different distribution schemes. In the model, genetic algorithm is used to study the distribution configuration scheme with the minimum cost, and the optimal location scheme is obtained. However, due to the fact that the method fails to consider the impact of different external factors on the location of logistics distribution centre, the customer satisfaction and on-time delivery rate are reduced, and the distribution cost is increased.

In order to better solve the above problems, combined with the blockchain technology, a location method of agricultural products logistics distribution centre based on blockchain is designed and proposed to improve the probability of on-time delivery and reduce the distribution cost. The overall research scheme of this method is as follows:

1 According to the site-selection principle of agricultural products logistics distribution centre, combined with the blockchain technology, the objective function of the site-selection model of agricultural products logistics distribution centre is constructed, and the constraint conditions are divided, and the site-selection model of agricultural product logistics distribution centre is established.

2 Based on the above construction of site-selection model of agricultural products logistics distribution centre, the mountain climbing algorithm and particle swarm optimisation algorithm are integrated to solve the site-selection model of agricultural product logistics distribution centre, and the optimal site-selection scheme of agricultural product logistics distribution centre is obtained.

3 Compared with the traditional delivery rate and delivery cost, the proposed three methods are compared.

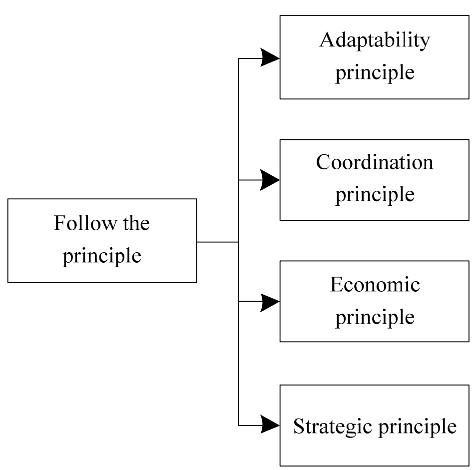
Through the above scheme, it can get the site-selection scheme of agricultural products logistics distribution centre with high efficiency and high satisfaction.

## 2 Location method of agricultural products logistics distribution centre

### *2.1 Construction of location model of agricultural products logistics distribution centre*

The site-selection of agricultural products logistics distribution centre needs to select an economic region which contains various types of agricultural products demand points (Sun et al., 2018), and select a suitable location to complete the distribution and planning of agricultural products. A good logistics distribution scheme can effectively promote the forwarding, transfer and other operations of the logistics distribution centre, so as to obtain the best revenue.

**Figure 1** Site-selection principles of logistics distribution centre



In the process of agricultural products logistics distribution, a large number of buildings and related machinery and equipment are needed. When the logistics centre is established, it is difficult to move. If the location is not ideal, it will cause very serious economic losses. It can be seen that the site-selection of logistics distribution centre occupies a very important position in the planning process. When establishing a logistics centre, the following principles should be followed, as shown in Figure 1:

1 adaptability principle

2 coordination principle

3 economic principle

4 strategic principle.

**Figure 2** Factors affecting the location of agricultural products logistics distribution centre

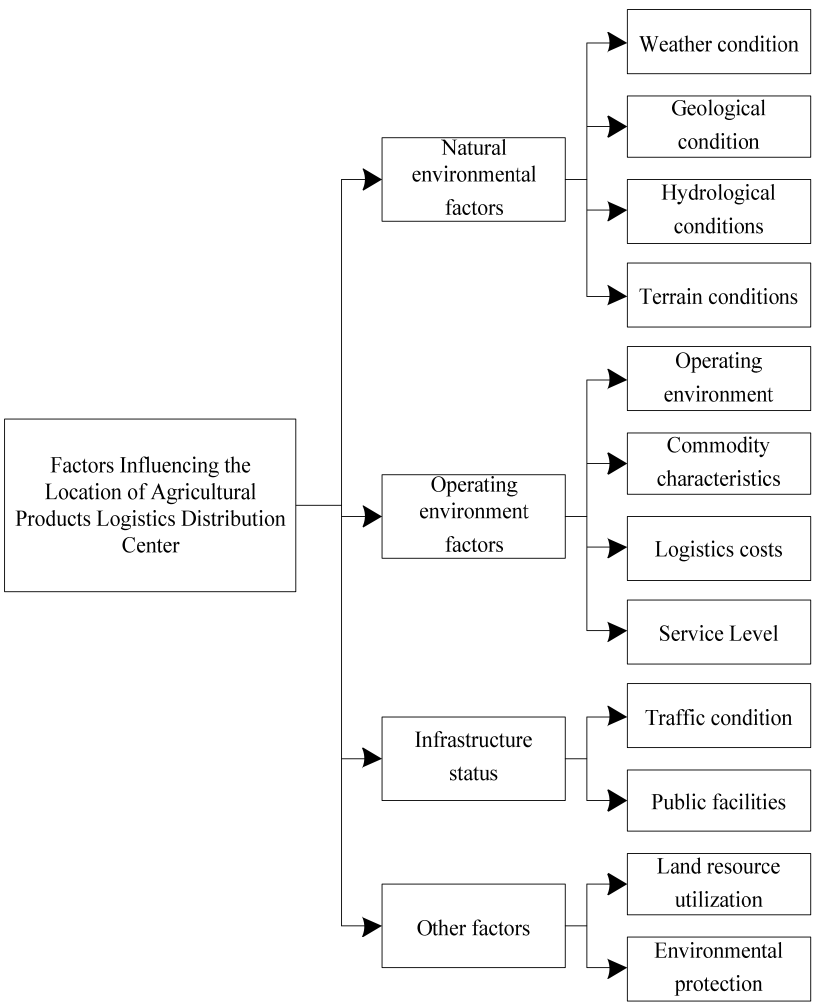
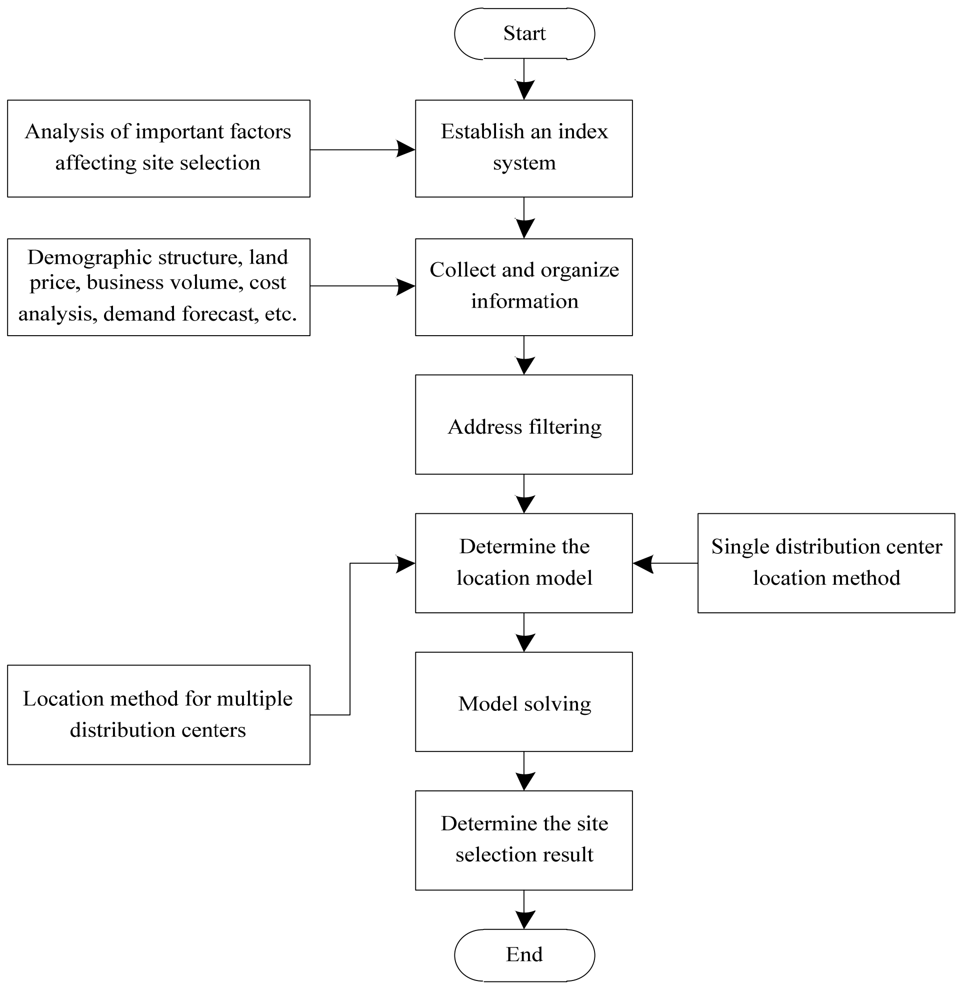


**Figure 3** Flow chart of site-selection of agricultural products logistics distribution centre




With the continuous increase of the types of agricultural products and the continuous rise of customer demand, there is more and more professional demand for agricultural products. One of the most important is the freshness of agricultural products. In order to ensure the freshness of different types of agricultural products (Xu and Shi, 2018; Yang et al., 2019), in the actual distribution process, it needs to pay attention to the following aspects:

1 The production scale of agricultural products needs to meet the living needs of local residents, and also needs to adapt to the local follow-up development needs. The site-selection of logistics distribution centre needs to be analysed and studied from many aspects and angles.

2 Due to the limited fresh-keeping time of fruits and vegetables, if the transportation time is longer, it will produce greater loss. Consumers have very high requirements for the freshness of fruits and vegetables products. The site-selection of fruit and vegetable logistics distribution centre needs to be located on the trunk road with

convenient transportation and close to the supply and demand point. The transportation channel with good traffic conditions is selected to avoid the occurrence of traffic jam, so that it can reach the demand point at the fastest speed, and effectively avoid the decrease of freshness and the increase of loss (Zhang et al., 2017; Zhou and Zheng, 2019).

3 Due to the special requirements of refrigeration technology for refrigerated products, it is necessary to select the corresponding refrigeration equipment for product storage.

The site-selection of agricultural products logistics distribution centre should focus on the following factors, as shown in Figure 2.

In the logistics system, the site-selection of logistics distribution centre is the first problem to be solved in the logistics system. In the process of practical research, it is necessary to consider the specific site-selection of distribution centre in combination with the actual situation.

Among them, the agricultural products logistics distribution centre is an important hub connecting the logistics system (Wang et al., 2017a). Therefore, the appropriate site-selection of the logistics distribution centre can not only effectively reduce the logistics costs, but also reduce the loss in the process of product transportation and increase the profit space; at the same time, it is convenient for the regional coordinated production and consumption, and ensure the stable development of the logistics system.

The site-selection of agricultural products logistics distribution centre is a complex and tedious work (Fei and Zhang, 2016; Chen and Fu, 2019). First of all, it is necessary to set a precise process. Through the effective control of the process, the efficiency and accuracy of the location can be enhanced. The specific operation process of site-selection of agricultural products logistics distribution centre is given in Figure 3.

It can be seen from Figure 3 that in the early stage of the site-selection of agricultural products logistics distribution centre, different influencing factors need to be analysed and studied, and corresponding index system should be established to determine what information needs to be collected in the process of site-selection. After the completion of data analysis, combined with the actual situation of the study area, several addresses are determined, several alternative addresses are analysed and calculated (Wang et al., 2019a), and the final calculation results are compared to obtain the best address. The specific operation steps of site selection are as follows:

1 Clear index system:

Before site-selection, it is necessary to analyse the characteristics of agricultural products and site-selection demand in the study area, and then construct the impact index of agricultural products logistics distribution centre based on this.

2 Data collection and sorting:

Agricultural products and transportation information in the study area are collect, sort out and analyse the data in each region.

3 Address screening:

The obtained data are fully collated and analysed, and the customer demand is predicted. After the prediction, the site-selection scope can be determined through the actual situation, that is, the initial candidate site is determined.

4 Clear location model:

Analysis of the economic situation of the study area and the characteristics of agricultural products (Fan, 2016), through the data collected in step 2, the corresponding index system is determined, and the location model is established.

5 Model solution:

Combined with the location model determined in step 4 and the data collected in step 2, the hybrid particle swarm optimisation algorithm is used to solve the model.

6 Clear site-selection results:

In the whole solution set of the model, the solution with the lowest cost or the largest economic benefit is selected as the optimal solution (Zhang et al., 2017; Mo, 2017), and its corresponding site-selection scheme is the final location result.

At present, the existing site-selection model of logistics distribution centre can be divided into two different types as:

1 continuous model

2 discrete model.

In the process of practical application, most of them adopt the discrete model. Following the selection principle of the model, the income of agricultural products logistics distribution centre can be divided into the following types, namely:

1 business service income of agricultural products logistics distribution centre

2 revenue from special services.

According to the above analysis, the following indexes should be considered in the early stage of model construction, as shown in Figure 4.

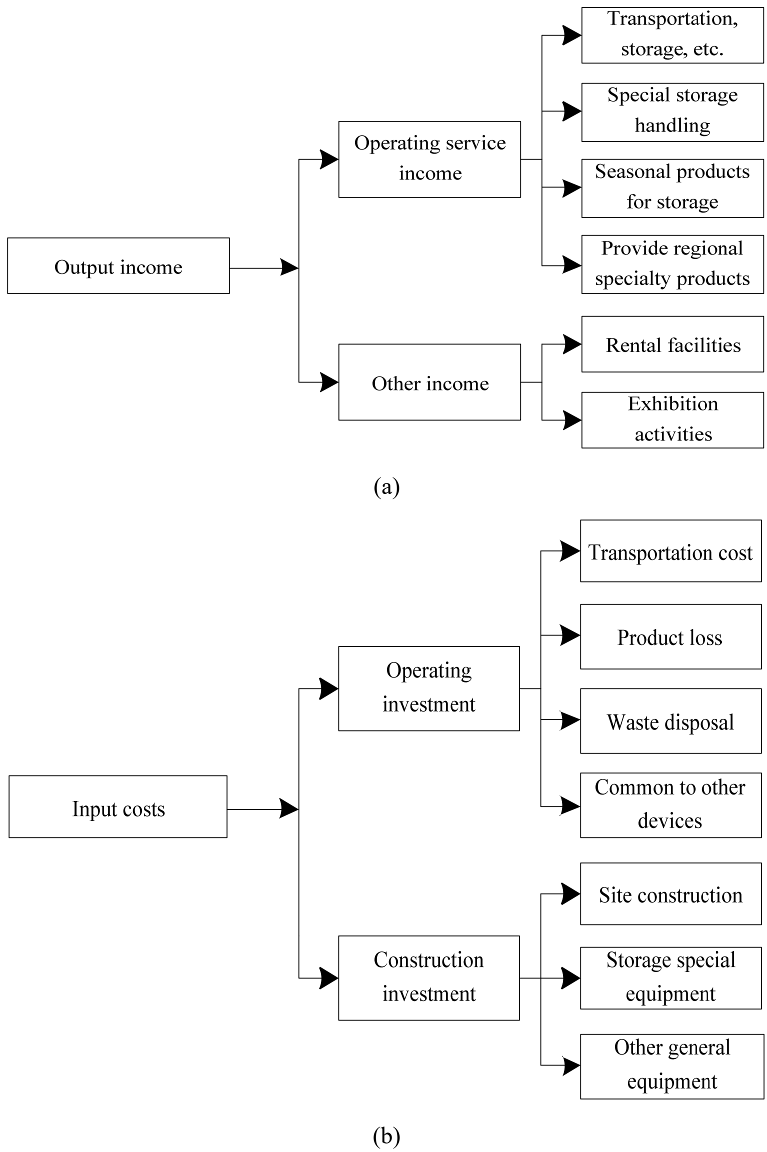
It is set that there are a logistics distribution centre alternative points (Zhang et al., 2016), *c* supply points and *b* demand points in the service area of the logistics distribution centre. The objective function of the site-selection model of the logistics distribution centre is as follows:

$$\max F\left(Q_{cab}\right)=\frac{\begin{array}{c}\sum_{a=1}^{n}\sum_{c=1}^{m}P_a I_{ca}Q_{ca}+\sum_{a=1}^{n}\sum_{c=1}^{m}P_a I_{ab}Q_{ab}\\+\sum_{a=1}^{n}P_a I_a Q_a+\sum_{a=1}^{n}P_a M_a\end{array}}{\begin{array}{c}\sum_{a=1}^{n}\sum_{c=1}^{m}P_a H_{ca}Q_{ca}+\sum_{a=1}^{n}\sum_{c=1}^{l}P_a H_{ab}Q_{ab}\\+\sum_{a=1}^{n}P_a S_a+\sum_{a=1}^{n}P_a S'_a\end{array}} \tag{1}$$

In formula (1), $P_a$ represents whether the logistics centre is selected. It can select two values: 0 or 1, that is:

$$P_a=\begin{cases}0, & \text{The logistics distribution centre is not selected}\\ 1, & \text{When the logistics distribution centre is selected}\end{cases} \tag{2}$$

**Figure 4** Index system of the site-selection of agricultural products logistics distribution centre, (a) output income (b) input cost




Formula (1) needs to satisfy the following constraints:

$$\sum_{a=1}^{n} Q_{ca} \leq L_c \tag{3}$$

$$\sum_{a=1}^{n} Q_{ab} \geq X_b \tag{4}$$

$$\sum_{c=1}^{m} Q_{ca} = \sum_{b=1}^{l} Q_{ab} \leq P_a V_a \tag{5}$$

$$\sum_{a=1}^{n} P_a = T \tag{6}$$

$$\sum_{a=1}^{n} P_a S_a + \sum_{a=1}^{n} P_a S_a \leq A \tag{7}$$

$$Q_{ca} \geq 0 \tag{8}$$

$$Q_{ab} \geq 0 \tag{9}$$

$$Q_a \geq 0 \tag{10}$$

Combined with the above analysis and blockchain technology, the site-selection model of agricultural products logistics distribution centre is established.

$$CI = \frac{\lambda_{\max} - n}{n - 1} \tag{11}$$

## 2.2 Optimal location of agricultural products logistics distribution centre based on blockchain

### 2.2.1 Basic PSO algorithm

In general, each particle in PSO algorithm corresponds to the solution of an optimisation problem, which is determined by fitness function.

A set of random solutions are initialised firstly based on the basic PSO algorithm to obtain the optimal solution by iterating and updating the fitness (Chen, 2016; Mou and Zhu, 2019). In the process of updating and solving, it is necessary to update the individual optimal value *pbest* and the optimal value of particle swarm *gbest* in real-time.

$$V_i = \omega \cdot V_1 + c_1 \cdot r_1 \cdot (pbest_i - x_i) + c_2 \cdot r_2 \cdot (gbest_i - x_i) \tag{12}$$

$$x_i = x_i + V_i \tag{13}$$

where formula (12) can be divided into three parts, namely:

1 Initial velocity of particles.

2 The thinking of particles themselves;

3 Information sharing and cooperation among particles.

$\omega$ represents the weight; $c_1$ and $c_2$ are the acceleration constants; $r_1$ and $r_2$ represents a random number between 0 and 1.

In the process of particle swarm optimisation, several parameters need to be set, which are given as follows:

1 the maximum speed is $V_{\max}$

2 the maximum number of iterations is $T$

3 the inertia weight is $\omega$

4 the population size is $m$

5 the cognitive constant is $c_1$ and $c_2$.

The value of $V_{max}$ affects the upper limit velocity of particles (Chen et al., 2018), in which the inertia weight $\omega$ can keep the particles inertial, and expand the search space to search for new areas.

Where $c_1$ and $c_2$ can also be understood as the acceleration of particles in the particle swarm, that is, the acceleration ability of particles, where the larger the value of $c_1$ and $c_2$ are, the greater the value of acceleration is (Zeng et al., 2019; Huang et al., 2018); if the acceleration is too large, it is easy to cause particle overflow.

**Figure 5** Flow chart of basic PSO algorithm operation

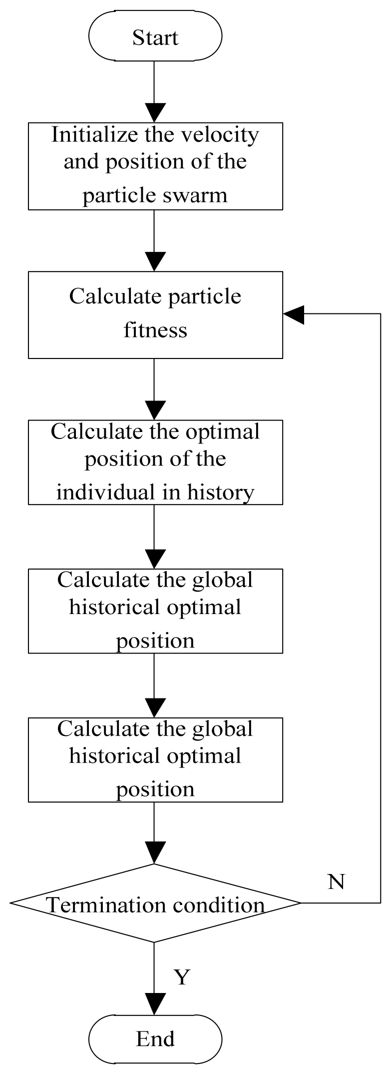
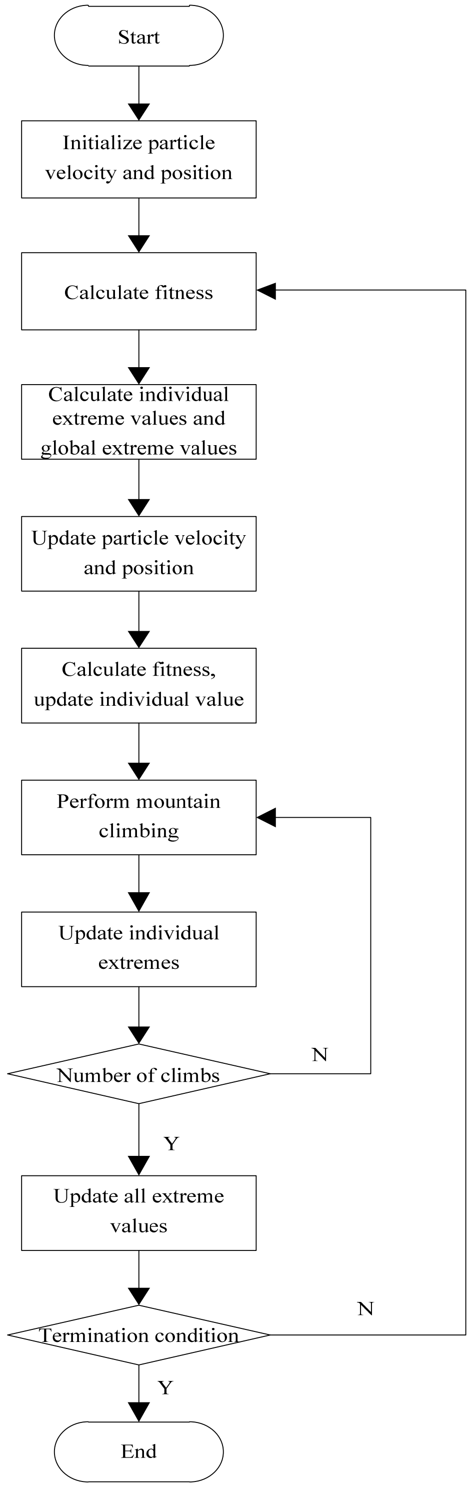


**Figure 6** Flow chart of particle swarm optimisation algorithm



The flow chart of basic PSO algorithm operation is given by Figure 5.

1 The velocity and position of particles are initialised.

2 The fitness value of each particle in the population is calculated (Peng and Li, 2018).

3 The fitness value of all particles in the particle swarm is compared with the best position it has experienced; if it is better, it is set as the current most position.

4 The fitness value of all particles in the particle swarm is compared with the best position in all the experiences. If it is better, the index number of the best position is reset.

5 The velocity and position of particles are updated by the relevant formula.

6 Assuming that the constraints are not met, return to step 2, if the end condition is met, the calculation ends.

The basic PSO algorithm is simple and easy to implement, and has good convergence performance. However, it has low accuracy in the actual operation process. In this paper, a hybrid particle swarm optimisation algorithm is proposed by combining PSO algorithm with mountain climbing algorithm. The specific operation flow of hybrid PSO algorithm is shown in Figure 5.

1 The particle swarm is initialised.

2 All individual particles in the particle swarm are normalised by integer.

3 The fitness values of each particle are evaluated respectively, and the individual historical optimal solution is set as the initial evaluation solution to search the global optimal value.

4 The speed of each particle and the position of the next generation are updated.

5 The particle position vector is normalised by integer, and the fitness value is calculated (Zeng et al., 2016; Wang et al., 2019b). At the same time, the mountain climbing operation is carried out for each particle combining with the mountain climbing algorithm. If the fitness value is low, the individual's historical optimal solution is updated until the preset position is reached; if the fitness value is smaller, the individual's historical optimal solution is updated until the set mountain climbing operation position is reached. The individual historical optimal solution is compared with the global optimal value. If the fitness value is small, the global optimal value is updated.

6 Assuming that the termination condition is not met, return to step 4; if the termination condition is met, the calculation ends.

On the basis of the above analysis, the idea of mountain climbing algorithm and particle swarm optimisation algorithm are combined, and the hybrid particle algorithm is applied to the site-selection model of agricultural products logistics distribution centre to obtain the optimal site-selection scheme.

## 3 Simulation experiment

In order to verify the comprehensive effectiveness of the proposed site-selection method of agricultural products logistics distribution centre based on blockchain, the simulation experiment is carried out under Windows10 operating system, 2.6 GHz CPU, 8 GB memory, NVIDIA Ge Force GTX65 platform. In the experiment, H company is taken as the research object, the number of distribution centres is set, and the number of distribution centres in different methods is solved.

The overall experimental scheme is set as follows: in the above experimental environment, taking on-time delivery rate, customer satisfaction and logistics distribution cost as the experimental comparison indicators, the proposed method is compared with the methods in Li and Pan (2017), Wang et al. (2017b) and Zhu (2017).

1 On-time delivery rate: on-time delivery rate refers to the probability that the actual delivery time is close to the agreed delivery time of agricultural products consumers. The higher the on-time delivery rate is, the more effective the site selection result is.

2 Customer satisfaction: customer satisfaction refers to the satisfaction degree of users to the whole distribution process. The higher the satisfaction degree is, the more effective the location result is.

3 Logistics distribution cost: the distribution cost refers to the cost of human and material resources for the distribution of agricultural products. The lower the distribution cost, the more effective the location result is.

### *3.1 Comparison of on-time delivery rate*

The maximum convergence times is set as 100 and the running time is 50 s. The on-time delivery rate of four kinds of logistics distribution centre location is compared. The specific experimental results are shown in the Table 1.

**Table 1** Comparison results of on-time delivery rate of different methods

| *Number of iterations/ (times)* | *Running time/(s)* | *On-time delivery rate of the proposed method/(%)* | *On-time delivery rate of the method in Li and Pan (2017)/(%)* | *On-time delivery rate of the method in Wang et al. (2017b)/(%)* | *On-time delivery rate of the method in Zhu (2017)/(%)* |
|---|---|---|---|---|---|
| 5 | 12 | 98.96 | 93.85 | 85.65 | 89.95 |
| 10 | 14 | 97.25 | 92.96 | 83.85 | 92.02 |
| 15 | 16 | 96.14 | 94.58 | 82.47 | 91.94 |
| 20 | 18 | 95.63 | 91.44 | 88.65 | 90.26 |
| 25 | 20 | 96.15 | 90.25 | 89.52 | 93.73 |
| 30 | 22 | 97.22 | 92.27 | 88.14 | 92.32 |
| 35 | 24 | 98.02 | 91.93 | 87.95 | 92.14 |
| 40 | 26 | 99.63 | 90.87 | 86.55 | 91.19 |
| 45 | 28 | 98.57 | 93.68 | 85.85 | 93.85 |
| 50 | 30 | 95.56 | 92.45 | 86.96 | 87.76 |
| 55 | 32 | 95.54 | 91.96 | 87.54 | 85.98 |

**Table 1** Comparison results of on-time delivery rate of different methods (continued)

| *Number of iterations/ (times)* | *Running time/(s)* | *On-time delivery rate of the proposed method/(%)* | *On-time delivery rate of the method in Li and Pan (2017)/(%)* | *On-time delivery rate of the method in Wang et al. (2017b)/(%)* | *On-time delivery rate of the method in Zhu (2017)/(%)* |
|---|---|---|---|---|---|
| 60 | 34 | 97.78 | 94.44 | 88.52 | 88.47 |
| 65 | 36 | 98.69 | 91.87 | 89.25 | 86.82 |
| 70 | 38 | 98.35 | 90.52 | 88.64 | 84.54 |
| 75 | 40 | 96.25 | 92.55 | 89.25 | 87.63 |
| 80 | 42 | 97.15 | 93.44 | 88.58 | 88.09 |
| 85 | 44 | 99.66 | 92.15 | 87.61 | 90.74 |
| 90 | 46 | 98.05 | 92.00 | 89.64 | 86.96 |
| 95 | 48 | 96.85 | 91.83 | 88.56 | 87.47 |
| 100 | 50 | 97.04 | 90.45 | 87.15 | 89.11 |
| Mean value | - | 97.4245 | 92.2745 | 87.5165 | 89.5485 |

Analysis of the experimental data in Table 1 shows that with the continuous increase of iteration times and running time, the on-time delivery rate of each method has a very obvious change. Compared with the other three methods, the delivery rate of the proposed method is obviously higher, and the average on-time delivery rate is 97.4%. In the process of actual site-selection, the proposed method can effectively analyse the influence of different surrounding factors on the site-selection of agricultural products distribution centre, and establish a logistics distribution centre in the less affected area, which can effectively improve the on-time delivery rate.

## *3.2 Comparison of logistics distribution cost*

The site-selection of the optimal address needs cost trade-off. The following experimental tests compare the logistics distribution costs of four different methods. The specific experimental results are shown in Table 2.

By analysing the experimental data in Table 2, it can see that the logistics distribution cost of the proposed method is significantly lower. The main reason is that the proposed method analyses the impact of different factors on the site-selection of logistics distribution centre. After the analysis, the region with the least impact is selected to construct the logistics distribution centre, which can effectively reduce the interference on the distribution path and reduce the logistics distribution cost.

## *3.3 Comparison of user satisfaction*

Customer satisfaction is a very important indicator. The following experiments analyse the impact of logistics delivery time on customer satisfaction.

**Table 2** Logistics distribution cost of different methods

| *Site-selection scheme no.* | *Transportation volume/(ton)* | *Logistics distribution cost of the proposed method/(10,000 yuan)* | *Logistics distribution cost of the method in Li and Pan (2017)/(10,000 yuan)* | *Logistics distribution cost of the method in Wang et al. (2017b)/(10,000 yuan)* | *Logistics distribution cost of the method in Zhu (2017)/(10,000 yuan)* |
|---|---|---|---|---|---|
| 01 | 2.0 | 0.45 | 0.47 | 0.49 | 0.51 |
| 02 | 2.0 | 0.47 | 0.50 | 0.52 | 0.55 |
| 03 | 2.0 | 0.48 | 0.53 | 0.55 | 0.58 |
| 04 | 2.0 | 0.46 | 0.49 | 0.52 | 0.54 |
| 05 | 2.0 | 0.38 | 0.42 | 0.45 | 0.48 |
| 06 | 2.0 | 0.35 | 0.38 | 0.42 | 0.46 |
| 07 | 2.0 | 0.39 | 0.41 | 0.43 | 0.44 |
| 08 | 2.0 | 0.41 | 0.43 | 0.46 | 0.48 |
| 09 | 2.0 | 0.46 | 0.50 | 0.52 | 0.53 |
| 10 | 2.0 | 0.44 | 0.45 | 0.47 | 0.50 |
| 11 | 2.0 | 0.42 | 0.44 | 0.50 | 0.52 |
| 12 | 2.0 | 0.40 | 0.44 | 0.47 | 0.51 |
| 13 | 2.0 | 0.35 | 0.38 | 0.40 | 0.42 |
| 14 | 2.0 | 0.33 | 0.35 | 0.38 | 0.41 |
| 15 | 2.0 | 0.38 | 0.42 | 0.45 | 0.47 |
| 16 | 2.0 | 0.40 | 0.44 | 0.47 | 0.50 |
| 17 | 2.0 | 0.42 | 0.45 | 0.48 | 0.51 |
| 18 | 2.0 | 0.43 | 0.46 | 0.50 | 0.53 |
| 19 | 2.0 | 0.47 | 0.51 | 0.54 | 0.57 |
| 20 | 2.0 | 0.48 | 0.53 | 0.55 | 0.59 |
| Mean value | - | 0.4185 | 0.45 | 0.4785 | 0.505 |

**Table 3** Changes of customer satisfaction under different user endurance time

| *Site-selection scheme* | *User endurance time/(min)* | *User satisfaction of the proposed method/(%)* | *User satisfaction of the method in Li and Pan (2017)/(%)* | *User satisfaction of the method in Wang et al. (2017b)/(%)* | *User satisfaction of the method in Zhu (2017)/(%)* |
|---|---|---|---|---|---|
| 01 | 10 | 75 | 72 | 74 | 70 |
| 02 | 15 | 80 | 74 | 78 | 73 |
| 03 | 20 | 85 | 78 | 80 | 75 |
| 04 | 25 | 90 | 82 | 85 | 78 |
| 05 | 30 | 95 | 86 | 87 | 82 |
| 06 | 35 | 99 | 90 | 93 | 85 |

Analysis of the above experimental data shows that with the continuous increase of user tolerable time, the user satisfaction of various methods shows a linear upward trend. However, compared with the other three methods, the user satisfaction of the proposed method is significantly higher, with the highest satisfaction of 99%. This is because the proposed method can effectively avoid the areas with more influencing factors and select the areas with less influence to construct the logistics distribution centre, which can effectively avoid external interference and improve customer satisfaction.

## 4 Conclusions

Aiming at a series of problems existing in the traditional site-selection method of agricultural products logistics distribution centre, this paper designs and proposes a site-selection method of agricultural products logistics distribution centre based on block chain. The results show that the method has high on-time delivery rate and customer satisfaction when selecting the location of agricultural products logistics distribution centre. Specifically, compared with the method based on DEA and AHP, the on-time delivery rate is significantly improved, up to 97.4%; compared with the method based on genetic algorithm, the user satisfaction is greatly improved, and the highest satisfaction reaches 99%. Therefore, the proposed site-selection method based on blockchain can better meet the requirements of the site-selection of agricultural products logistics distribution centre. In the future, combined with the actual demand, we will analyse and study more influencing factors to obtain a better location of logistics distribution centre.

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