

International Journal of Environment and Pollution

ISSN online: 1741-5101 - ISSN print: 0957-4352

<https://www.inderscience.com/ijep>

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Article History:

Received:	30 July 2022
Last revised:	08 September 2022
Accepted:	17 October 2022
Published online:	18 July 2023

The customer trust evaluation of e-commerce market based on portfolio weighting: cloud model

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Abstract: In order to improve the evaluation effect of customer trust in e-commerce market, this paper studies the evaluation method of customer trust in e-commerce market based on combination weighting and cloud model. According to the technical, business, the customer first three factors, e-commerce market customer trust evaluation index system; then the combined weight of evaluation index is determined by the improved analytic hierarchy process (AHP) and entropy method; finally through the cloud model building customer trust evaluation level discriminant model, introducing fuzzy entropy for final evaluation results. Experiments show: the method is constructed of the evaluation index in the index layer Cronbach 's were significantly higher than 0.7, shows that this method has a better effect of index system building, can effectively promote the electronic commerce often customer trust evaluation results.

Keywords: combination weighting; cloud model; e-commerce market; customer trust; AHP; analytic hierarchy process; entropy value method.

Reference to this paper should be made as follows: Chu, W. and Chen, H. (2022) 'The customer trust evaluation of e-commerce market based on portfolio weighting: cloud model', *Int. J. Environment and Pollution*, Vol. 71, Nos. 1/2, pp.126–140.

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1 Introduction

E-commerce market is the e-commerce between online customers. Both buyers and sellers complete product transactions online, which is not limited by time and space. With the acceleration of the development of e-commerce, transaction risks are also increasing. Customer trust degree of e-commerce market represents the trust degree of customers to merchants. By improving the evaluation effect of customer trust degree of e-commerce market, we can timely and accurately understand the development status and existing problems of e-commerce market, so as to make corresponding improvements, and then enhance the customer trust degree of e-commerce market.

For this reason, effective evaluation methods of e-commerce market trust need to be studied. For example, Gong and He (2021) studied the user trust model of social e-commerce on the premise of considering the relationship of distrust. The distrust degree among users was incorporated into the user trust degree measurement as a negative weight, and the trust degree generated by local interaction and established globally was considered to construct the trust degree evaluation model of social e-commerce users, and the entropy weight method was used to calculate the influence degree of both on the trust degree of social e-commerce users. This model is relatively novel and can effectively improve the objectivity of trust measurement results. However, the subjective judgement of users has a large error impact on the results of the model, which is difficult to ensure the accuracy of user trust evaluation. Zhang et al. (2022) applies FANP cloud user behaviour trust evaluation optimisation, the extension of the control objectives for history access behaviour and the current access environment, will visit behaviour history is divided into regular behaviour and grey behaviour, will be divided into current access to environmental information integrity and access security, according to the different control targets of the corresponding control principles, constructing the corresponding network analysis model, Network analytic hierarchy process (AHP) software is used to calculate the limit super matrix of each module and obtain the stability weight. This method has a good identification and evaluation effect on malicious users, and can quickly identify users with low trust, but its accuracy is poor and there is a certain evaluation error.

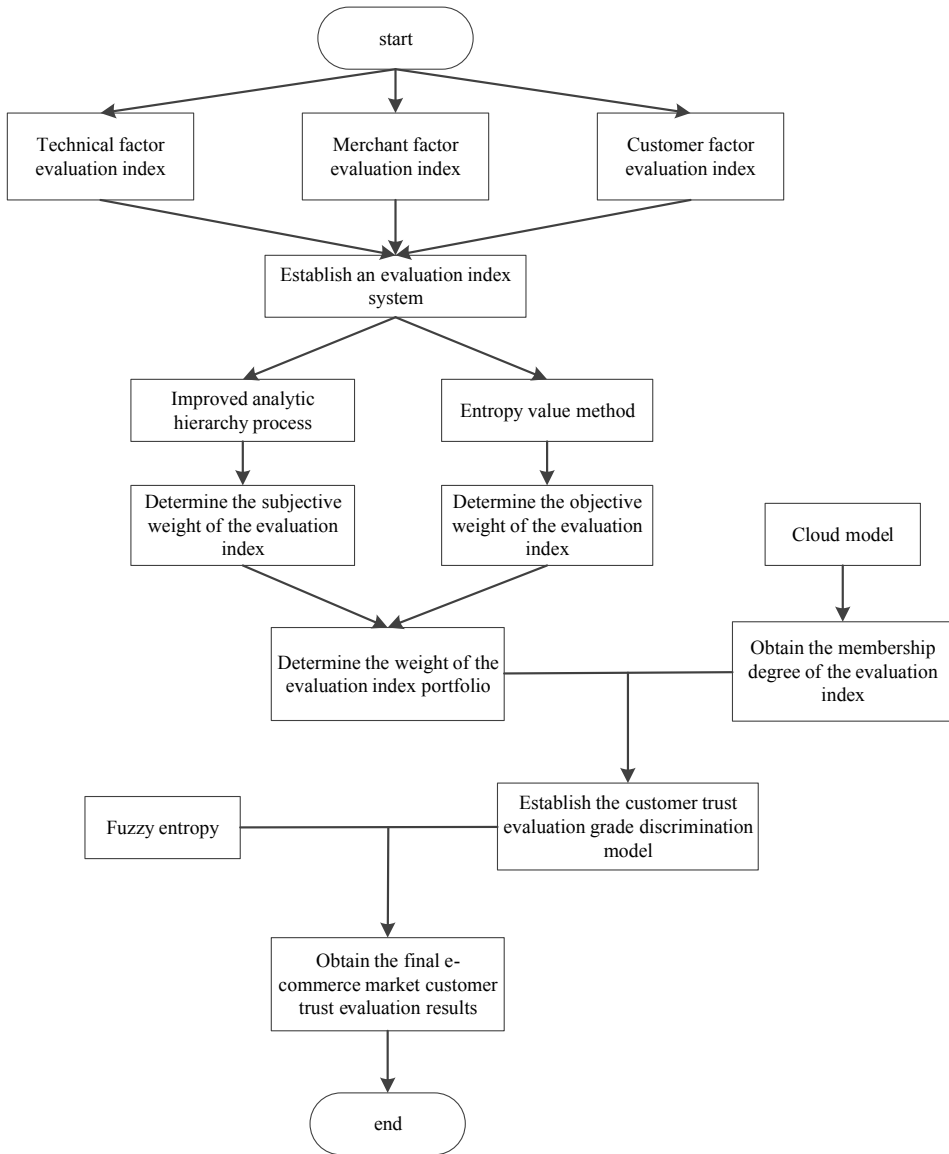
The evaluation effect of the above two methods is poor, the reason is that these two methods cannot consider the ambiguity and randomness of user trust evaluation at the same time. In this paper, the combination weighting method is applied to this research field. The combination weighting method is used to solve the ambiguity problem in the evaluation process, and the cloud model is used to solve the randomness problem in the evaluation process, so as to improve the evaluation effect of customer trust in the e-commerce market.

2 Evaluation of customer trust in e-commerce market

2.1 Overall design of evaluation method

The overall design scheme of customer trust evaluation method in the e-commerce market in this paper is shown in Figure 1.

Figure 1 Overall design scheme of the proposed method



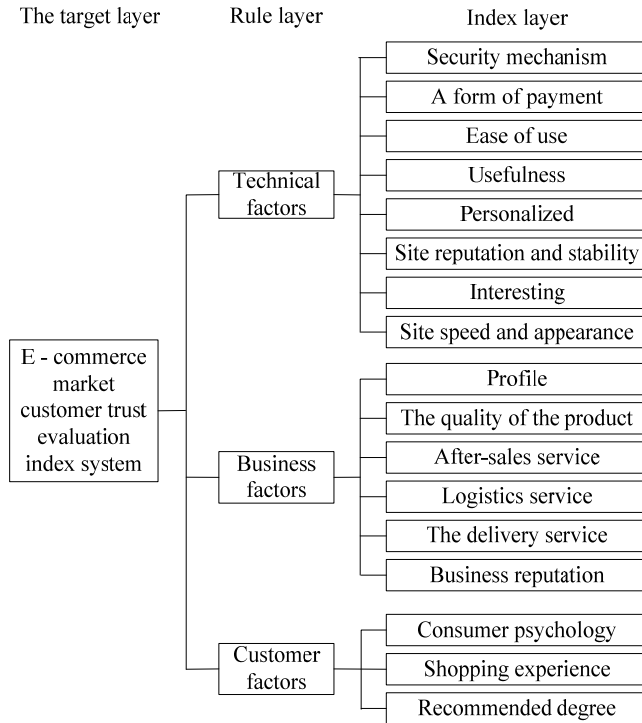
Firstly, this paper starts from three aspects of technology, merchants and customers, subdivides the evaluation index of customer trust in e-commerce market, and establishes the corresponding evaluation index system. On this basis, the weight of each evaluation index is determined. In order to better realise the evaluation of customer trust in e-commerce market, subjective and objective evaluation indexes are integrated in this part. The subjective weight of evaluation index was determined by using improved AHP. The objective weight of evaluation index was determined by entropy method. After combining subjective and objective weights, the combined weights of evaluation indexes are determined. After the integration of subjective and objective evaluation indexes, the

membership degree of evaluation indexes is obtained through the cloud model, and the combination weight is combined to establish the customer trust evaluation grade discrimination model, and the fuzzy entropy is introduced to obtain the final customer trust evaluation results in the e-commerce market.

2.2 E-commerce market customer trust evaluation index system

According to the three factors of technology, merchants and customers, the evaluation index system of customer trust in e-commerce market is established. The evaluation index system of customer trust in e-commerce market is shown in Figure 2.

Figure 2 Evaluation index system of customer trust in e-commerce market



As can be seen from Figure 2, this paper divides the evaluation index system into three aspects: technical factors, merchant factors and customer factors. Among them, technical factors can ensure the consumption safety of customers in the e-commerce market, protect their consumption rights and interests, and improve the website’s interest and customer trust in the e-commerce market. Merchant factors include merchant delivery speed and after-sales service, etc. Speeding up delivery speed and strengthening after-sales service can improve customer trust in e-commerce market. Customer factors include customer consumption psychology and recommendation degree. We recommend products that meet customers’ psychological needs to improve customer trust in the e-commerce market.

2.3 Weight determination of customer trust evaluation index based on portfolio weighting

Based on the combination weighting method of subjective and objective integration, this paper determines the weight of customer trust evaluation index in e-commerce market. Firstly, the subjective weight of the evaluation index is determined by the improved AHP, and then the objective weight of the evaluation index is determined by the entropy method, so as to complete the determination of the combined weight of the subjective and objective indicators for the evaluation of customer trust in the e-commerce market.

Firstly, the subjective weight of customer trust evaluation index in e-commerce market is determined through AHP. The specific steps are as follows:

Step 1: Establish the hierarchical structure successively according to the target layer, criterion layer and index layer of the evaluation index system of customer trust in e-commerce market;

Step 2: Construct the comparison matrix P of the subjective weight of the customer trust evaluation index in the e-commerce market, hire experts in the field of customer trust evaluation in the e-commerce market, and compare the relative importance of the corresponding indexes by these experts to obtain quantitative scores;

Step 3: Establish the judgement matrix A of the subjective weight of customer trust evaluation index in the e-commerce market. The element in row i and column j in A is a_{ij} , as shown in equation (1):

$$a = \begin{cases} \left[\begin{array}{cc} \frac{y_{\max}}{y_{\min}} \frac{y_i - y_j}{y_{\max} - y_{\min}} - \frac{y_i - y_j}{y_{\max} - y_{\min}} + 1, & y_i \geq y_j \\ \left[\begin{array}{cc} \frac{y_{\max}}{y_{\min}} \frac{y_i - y_j}{y_{\max} - y_{\min}} - \frac{y_i - y_j}{y_{\max} - y_{\min}} + 1 \end{array} \right]^{-1}, & y_i < y_j \end{array} \right. & (1) \end{cases}$$

In equation (1), the importance ranking index of row i and column j in A is y_i and y_j ; The highest and lowest values of importance rank index are y_{\max} and y_{\min} .

In order to improve the determination accuracy of the subjective weight of the evaluation index, the AHP is improved through the properties of the optimal transfer matrix. The improvement process and the process of determining the subjective weight of the evaluation index after the improvement are as follows:

Step 1: Calculate the best transfer matrix C , let $b_{ij} = \lg a_{ij}$, get the element of A transfer matrix B , B is b_{ij} ; Since A is a reciprocal matrix, the C of A needs to meet the conditions as shown in equation (2):

$$c_{ij} = \frac{\sum_{k=1}^n \rho(b_{ik} - b_{jk})}{n} \quad (2)$$

In equation (2), the element of C is c_{ij} ; The transfer coefficient is ρ ; In row i and column j , the transfer elements of the k evaluation index are b_{ik} and b_{jk} ; The number of evaluation indicators of customer trust in e-commerce market is n .

Step 2: Calculate the quasi-optimal consensus matrix, transform A according to $a_{ij}^* = 10^{c_{ij}}$, and obtain the quasi-optimal consensus matrix $A^* = a_{ij}^*$ of A . The quasi-optimal consensus element of the subjective weight of customer trust evaluation index in e-commerce market is a_{ij}^* .

Step 3: Hierarchical single arrangement, according to the analytical method to calculate the feature vector $Q = (q_1, q_2, \dots, q_n)$ of A^* ; Add the elements in each row, as shown in equation (3):

$$\begin{bmatrix} \frac{\sum_{k=1}^n q_k}{q_1} \\ \vdots \\ \frac{\sum_{k=1}^n q_k}{q_n} \end{bmatrix} = \begin{bmatrix} \sum_{k=1}^n a_{i1}^* \\ \vdots \\ \sum_{k=1}^n a_{in}^* \end{bmatrix} \tag{3}$$

The elements after normalised Q are shown in equation (4):

$$q_k = \frac{1}{\sum_{k=1}^n \eta a_{ik}^*} \tag{4}$$

In equation (4), the constant is η ; The quasi-optimal consistent element of the k evaluation index in line i is a_{ik}^* .

Step 4: Total hierarchy ranking, let the weight of the indicator layer to the criterion layer be w_{ij} , and the weight of the criterion layer to the target layer be v_i , then the comprehensive weight of the indicator layer to the target layer is shown in equation (5):

$$\hat{w}_j = \sum_{j=1}^n w_{ij} v_i, j = 1, 2, \dots, n \tag{5}$$

In equation (5), the index number of the evaluation index layer of customer trust in the e-commerce market is j .

Then, the objective weight of customer trust evaluation index in e-commerce market is obtained by entropy method. The specific steps are as follows:

Step 1: Establish $m \times n$ e-commerce market customer trust evaluation index objective weight decision matrix $R = (r_{ij})_{m \times n}$.

Step 2: Solve the proportion of customer trust evaluation index values in the e-commerce market, as shown in equation (6):

$$\tau_{gj} = \frac{r_{gj}}{\sum_{g=1}^m \eta r_{gj}} \tag{6}$$

In equation (6), the number of weighting methods of customer trust evaluation index in e-commerce market is m ; The objective weight decision element of the j index of the g method is r_{gj} .

Step 3: Solve the objective weight entropy value of customer trust evaluation index in the e-commerce market, as shown in equation (7):

$$H_j = -\frac{\sum_{g=1}^m \tau_{gj} \ln \tau_{gj}}{\ln m} \tag{7}$$

Step 4: Calculate the weight of customer trust evaluation index of the *j* e-commerce market according to H_j , as shown in equation (8):

$$w'_j = \frac{1}{n - \sum_{g=1}^m H_j} - \frac{H_j}{n - \sum_{g=1}^m H_j} \tag{8}$$

The portfolio weight of customer trust evaluation index in the *j* e-commerce market is shown in equation (9):

$$w''_j = \sum_{j=1}^n \hat{w}_j w'_j \tag{9}$$

2.4 Evaluation of customer trust in e-commerce market based on cloud model

Combined with the subjective and objective weights of the evaluation index of customer trust in e-commerce market obtained in Section 2.3, the cloud model is used to complete the evaluation of customer trust in e-commerce market. Cloud model can realise the qualitative concept and quantitative values, the uncertainty of the conversion between can handle well with randomness and uncertainty of data, so this paper will cloud model is introduced into the e-commerce market customer trust evaluation process, through solving the problem of evaluating the randomness in the process of cloud model, and enhance customer trust in electronic commerce market assessment in the process of assessment results.

In this part, firstly, cloud generator is used to change the quantitative and qualitative characteristics in the evaluation of customer trust in e-commerce market, so as to effectively change the arbitrariness and ambiguity in the evaluation and obtain the quantitative value of membership degree. Then, through the bilateral constraints of normal distribution, the cloud model parameters of e-commerce market customer trust evaluation are solved, the discriminant model of e-commerce market customer trust evaluation level is established, and the final evaluation result of e-commerce market customer trust is established. Finally, the combined weighting – cloud model is used to complete the evaluation of customer trust in the e-commerce market.

The e-commerce market customer trust evaluation theory of quantitative domain is U , U for precise numerical, qualitative concept in U to U , e-commerce market customer trust evaluation index is x , x membership degree of T , $Z_T(x) \in [0, 1]$, $Z_T(x)$ for the stable tendency of random Numbers, so the distribution of x in U was called cloud, the e-commerce market customer trust evaluation index x is called A cloud droplets. In the evaluation of customer trust degree in e-commerce market, U represents the limit value corresponding to a trust degree level, and T represents the customer trust degree corresponding to this level in e-commerce market. The expectation Ex , entropy E_n and super-entropy He are used to describe the digital characteristics of customer trust in the e-

commerce market. Ex represents the point that can best describe a concept in the domain of customer trust in the e-commerce market, that is, the central value of the concept in U . En represents the acceptable value interval of customer trust in e-commerce market within U ; He represents the uncertainty measure of entropy, which is used to present the cloud droplet thickness.

Using cloud generator to change the quantitative and qualitative aspects of customer trust evaluation in e-commerce market, the steps are as follows:

Step 1: Establish En random number $En'_j = Norm(En, He^2)$ for customer trust evaluation in e-commerce market with A as the expected value and He^2 as the variance.

Step 2: Establish a random number $x_j = Norm(Ex, En'^2_j)$ for customer trust evaluation in e-commerce market with Ex as the expected value and En'^2_j variance.

Step 3: Solve the membership degree of customer trust evaluation index x_j in the j e-commerce market, as shown in equation (10):

$$\mu_j = \exp \left[-\frac{\alpha(x_j - Ex)^2}{2En^2} \right] \tag{10}$$

In equation (10), the adjustable factor is α ; The membership degree of the j e-commerce market customer trust evaluation index is μ_j .

Step 4: Generate a cloud drop (x_j, μ_j) in the evaluation domain of customer trust in an e-commerce market.

Step 5: Repeat steps 1–4 to generate N cloud droplets.

For the evaluation of customer trust degree in e-commerce market, the cloud generator can effectively change the arbitrariness and ambiguity in the evaluation, and obtain the quantitative value of membership degree.

Through the bilateral constraints of normal distribution, the cloud model parameter (Ex, En, He) is solved when evaluating customer trust in e-commerce market, as shown in equation (11):

$$\begin{cases} Ex = 0.5(\lambda D_{\min} + \lambda D_{\max}) \\ En = \frac{\lambda D_{\max} - \lambda D_{\min}}{6} \\ He = h \end{cases} \tag{11}$$

In equation (11), the maximum and minimum boundaries of the evaluation level standard of customer trust in e-commerce market are D_{\max} and D_{\min} ; The correction factor is λ ; The constant is h .

According to the cloud generator algorithm, the j e-commerce market customer trust evaluation index x_j is solved, which belongs to the cloud membership degree μ_j , and the comprehensive membership degree V of the evaluation index is obtained by combining w''_j , as shown in equation (12):

$$V = \sum_{j=1}^n \mu_j w_j'' \tag{12}$$

According to V , the discriminant model of customer trust evaluation level L in the e-commerce market is established, as shown in equation (13):

$$L = \max\{V_1, V_2, \dots, V_n\} \tag{13}$$

E-commerce market customer trust evaluation, the evaluation index level gap is larger, with A single index evaluation level for the final evaluation results, unable to present e-commerce market customer trust evaluation as A result, for this customer trust in electronic commerce market assessment, on the premise of grade evaluation and add A fuzzy entropy, used to present the evaluation results of the model of E cloud, According to L and E , the calculation process of (L,E) and E , the final evaluation results of customer trust in the e-commerce market, is shown in equation (14):

$$E = -\beta_2 \sum_{j=1}^n \theta [V_j \ln V_j + (1 - V_j) \ln (1 - V_j)] \tag{14}$$

In equation (14), the standardised coefficient is β_2 ; The fuzzy coefficient is θ ; The comprehensive membership degree of the j e-commerce market customer trust evaluation index is V_j .

The specific steps of customer trust evaluation in e-commerce market using portfolio weighting and cloud model are as follows:

- Step 1:* Establish the evaluation index system of customer trust in e-commerce market.
- Step 2:* The cloud generator is used as the evaluation index of customer trust in each e-commerce market, and the cloud model belonging to a certain trust level is established.
- Step 3:* Through the improved AHP and entropy method, determine the combined weight w'' of the evaluation index of customer trust in the e-commerce market.
- Step 4:* Solve the membership degree μ of each e-commerce market customer trust evaluation index, and determine the e-commerce market customer trust evaluation level L by combining w'' ;
- Step 5:* Introduce E , establish the two-dimensional evaluation result (L,E) of customer trust degree in e-commerce market, and obtain the final evaluation result of customer trust degree in e-commerce market.

The evaluation scale of customer trust in the e-commerce market is shown in Table 1.

Table 1 Evaluation scale of customer trust in e-commerce market

<i>Trust level</i>	<i>Description of trust</i>	<i>Scale</i>
1	Total distrust	[0, 0.25]
2	A lack of trust	[0.25, 0.5]
3	More trust	[0.5, 0.75]
4	Full trust	[0.75, 1]

At this point, the overall design of this method is completed. In this process, the subjective and objective weights of the evaluation index are determined by using the improved layer analysis method and entropy method respectively, and the combined weights of the evaluation index are determined by combining the subjective and objective weights, so as to obtain a more accurate and effective evaluation effect of customer trust in the e-commerce market. The cloud model can change each other between qualitative and quantitative. At the same time, the ambiguity and randomness in the evaluation process are considered. The membership degree of evaluation index can be obtained through the cloud model, and the combined weight of each index can be effectively evaluated. Combined with fuzzy entropy, the complexity of cloud model evaluation results can be better presented, and then the evaluation effect of customer trust in e-commerce market can be improved.

3 Experimental analysis

Taking an e-commerce market as the experimental object, the e-commerce market contains a total of 1837 suppliers, these suppliers generated a total of tens of thousands of transaction records; The method is used to evaluate the customer trust degree of the e-commerce market, so as to verify the effectiveness of the method.

The method in this paper is used to calculate the combined weight of each evaluation index of customer trust in the e-commerce market, and the calculation results are shown in Table 2.

Table 2 Portfolio weights of customer trust evaluation indexes in e-commerce market

<i>Rule layer</i>	<i>The combination weights</i>	<i>Index layer</i>	<i>The combination weights</i>
Technical factors	0.35	Security mechanism	0.14
		A form of payment	0.15
		Ease of use	0.09
		Usefulness	0.12
		Personalised	0.14
		Site reputation and stability	0.16
		Interesting	0.08
		Site speed and appearance	0.12
		Business factors	0.41
The quality of the product	0.18		
After-sales service	0.17		
Logistics service	0.18		
The delivery service	0.11		
Customer factors	0.24	Business reputation	0.19
		Consumer psychology	0.38
		Shopping experience	0.21
		Recommended degree	0.41

According to Table 2, the method in this paper can effectively calculate the combined weight of the evaluation index of customer trust in each e-commerce market. Among them, the proportion of technology factor is 0.35, the proportion of merchant factor is 0.41, and the proportion of customer factor is 0.24, indicating that among the factors affecting customer satisfaction in this e-commerce market, Product quality and service quality accounted for the largest proportion, followed by technical factors, while recommendation degree and shopping experience of other customers had little influence on customer trust evaluation. According to the weight of each evaluation index calculated in Table 2, the comprehensive membership degree of each e-commerce market evaluation index belonging to each evaluation level is calculated. The closer the membership degree is to 1, the higher the degree of the factor belonging to the evaluation level is; otherwise, the lower the degree of the factor belonging to the evaluation level is. The calculation results of comprehensive membership are shown in Table 3.

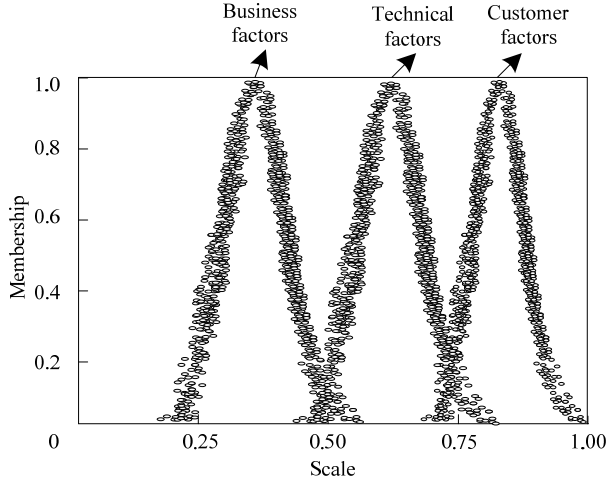
Table 3 E-commerce market evaluation comprehensive membership degree of market evaluation indicators

<i>Evaluation indicators</i>		<i>Comprehensive membership</i>			
<i>Rule layer</i>	<i>Index layer</i>	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
Technical factors	Security mechanism	0.000	0.006	0.378	0.328
	A form of payment	0.239	0.638	0.312	0.006
	Ease of use	0.927	0.214	0.000	0.000
	Usefulness	0.493	0.000	0.000	0.000
	Personalised	0.000	0.000	0.004	0.156
	Site reputation and stability	0.008	0.017	0.416	0.108
	Interesting	0.057	0.705	0.004	0.000
	Site speed and appearance	0.376	0.271	0.000	0.000
Business factors	Profile	0.000	0.000	0.245	0.205
	The quality of the product	0.007	0.106	0.186	0.003
	After-sales service	0.146	0.794	0.000	0.000
	Logistics service	0.465	0.361	0.000	0.000
	The delivery service	0.399	0.295	0.003	0.003
	Business reputation	0.785	0.087	0.002	0.002
Customer factors	Consumer psychology	0.096	0.404	0.185	0.001
	Shopping experience	0.000	0.002	0.234	0.197
	Recommended degree	0.004	0.101	0.307	0.173

According to Table 3, the method in this paper can effectively calculate and obtain the comprehensive membership degree of each evaluation index belonging to each evaluation level based on the combined weight of the evaluation index of customer trust in the e-commerce market in Table 2. Among the technical factors, ease of use has the highest comprehensive membership of 0.927 at the evaluation level of 1, indicating that ease of use is an important technical factor affecting customer trust. Among the merchant factors, after-sales service has the highest comprehensive membership of 0.794 in the evaluation level of 2, indicating that after-sales service is an important merchant factor affecting customer trust. Among the customer factors, the comprehensive membership degree of

consumer psychology in the evaluation level of 2 is the highest, which is 0.404, indicating that consumer psychology is an important customer factor affecting customer trust. The discriminant model of trust evaluation level is established according to the comprehensive membership degree, and fuzzy entropy is introduced to obtain the customer trust evaluation cloud map of the e-commerce market, as shown in Figure 3.

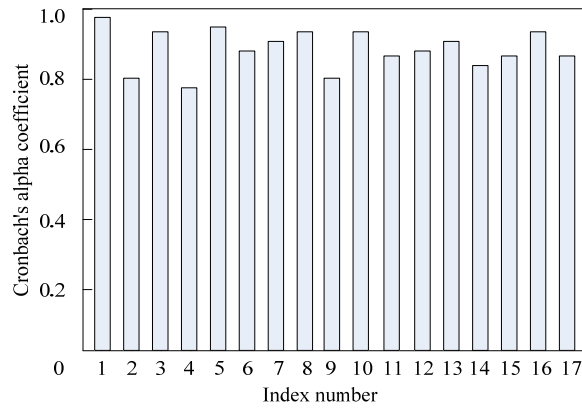
Figure 3 Cloud map of customer trust evaluation in e-commerce market



According to Figure 3, the method can effectively obtain cloud e-commerce market customer trust evaluation, comparative evaluation chart and Table 1 e-commerce market customer trust evaluation scale, customer factors fully trust, trust evaluation level for technical factors is more trust, trust evaluation level for merchants factors of trust evaluation is the lack of trust, Comprehensive analysis shows that in order to improve customer trust in this e-commerce market, it is necessary to focus on improving the content of each evaluation index in the business factor of the e-commerce market, and further strengthen the content of each evaluation index in the technical factor. Experimental results show that this method can effectively evaluate customer trust in e-commerce market.

Cronbach’s α coefficient was used to analyse the reliability of the evaluation index constructed by this method. The value interval of Cronbach’s α coefficient was [0,1]. The higher its value, the higher the internal consistency between the index layer index and the criterion layer index, the better the construction effect of the evaluation index. The reliability analysis results of the evaluation index constructed by this method are shown in Figure 3. The evaluation index numbers of customer trust in the e-commerce market are 1, 2, ..., 17.

According to Figure 4, the Cronbach’s of each evaluation index in the index layer constructed by this method is significantly higher than 0.7, indicating that the index layer constructed by this method has a high internal consistency with the criterion layer index, and the evaluation index construction effect is better.

Figure 4 Reliability analysis results of evaluation indicators (see online version for colours)

4 Discussion

According to the above experimental process, the detailed analysis process is as follows:

- 1 The method in this paper can effectively calculate the combined weight of customer trust evaluation indexes in each e-commerce market. Among them, the proportion of technical factors is 0.35, the proportion of merchant factors is 0.41, and the proportion of customer factors is 0.24, indicating that merchant factors account for the highest proportion in customer trust evaluation.
- 2 The method in this paper can effectively calculate and obtain the comprehensive membership degree of each evaluation index belonging to each evaluation level according to the combined weight of the evaluation index of customer trust in the e-commerce market. Among the technical factors, ease of use is the highest in the comprehensive membership of evaluation level 1, which is 0.927; Among the merchant factors, after-sales service has the highest comprehensive membership of 0.794 in the evaluation level of 2; Among the customer factors, the comprehensive membership degree of consumer psychology in the evaluation level of 2 is the highest, which is 0.404, indicating that ease of use, after-sales service and consumer psychology play an important role in the evaluation of customer trust in the e-commerce market.
- 3 The method can effectively obtain cloud e-commerce market customer trust evaluation, technical factors is more trust, trust evaluation level for merchants factors of trust evaluation is the lack of trust, to be the key to improve the e-commerce market business factors within the evaluation content, to further strengthen technological factors within the evaluation content.
- 4 The Cronbach's of each evaluation index in the index layer constructed by this method is significantly higher than 0.7, indicating that the internal consistency between the index layer constructed by this method and the criterion layer index is high, and the evaluation index construction effect is better.

5 Conclusion

In order to promote e-commerce market customer trust evaluation results, this paper studies based on the combination of empowerment – cloud model e-commerce market customer trust evaluation methods, timely understanding of the problems existing in the e-commerce market, and correct them, promote the safety and smoothness of the commodities trading, ultimately achieve the goal of improving customer satisfaction. Firstly, the evaluation index system of customer trust degree in e-commerce market is constructed, and then the weight of subjective and objective factors is fused to determine the combined weight of evaluation index. Finally, the evaluation grade discrimination model of customer trust degree is established to obtain the final evaluation result. The result of the final calculation of the combined weight is that the proportion of technical factors is 0.35, the proportion of merchant factors is 0.41, and the proportion of customer factors is 0.24, indicating that merchant factors account for the highest proportion in the evaluation of customer trust. Among them, the ease of use in the technical factor accounts for the largest proportion, the after-sales service in the merchant factor accounts for the largest proportion, and the consumer psychology in the customer factor accounts for the largest proportion, indicating that the three factors play an important role in the evaluation of customer trust in the e-commerce market. The Cronbach's of each evaluation index in the index layer constructed by the method in this paper is significantly higher than 0.7, indicating that the evaluation effect of the customer trust in the e-commerce market is better under the method in this paper. In actual application, this method can be used to analyse the specific e-commerce enterprise or business the customer trust, by assessing the customer trust, can provide a reference for e-commerce enterprises and businesses, to help them understand the customer's trust, the influence factors of distrusted, and targeted to make improvement and the enhancement, thus promote the electronic commerce enterprise or business to promote the service, To realise the considerable development of the e-commerce market.

Acknowledgements

This work was supported by University excellent young talents support program, no. gxyq2021029 and Bengbu University Humanities and Social Sciences Key Project, no. 2020SK01zd.

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