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Retraction

Retracted: Research on Evaluation Model of Hospital Informatization Level Based on Decision Tree Algorithm

Security and Communication Networks

This article has been retracted by Hindawi, as publisher, following an investigation undertaken by the publisher [1].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

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

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

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

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

References

[1] F. Wu, X. Liu, Y. Wang, X. Li, and M. Zhou, "Research on Evaluation Model of Hospital Informatization Level Based on Decision Tree Algorithm," *Security and Communication Networks*, vol. 2022, Article ID 3777474, 9 pages, 2022.

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Research Article

Research on Evaluation Model of Hospital Informatization Level Based on Decision Tree Algorithm

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In order to improve the weight calculation accuracy of hospital informatization level evaluation and shorten the evaluation time, a research method of hospital informatization level evaluation model based on the decision tree algorithm is proposed. Using the decision tree algorithm combining fuzzy theory and ID3, the decision tree is constructed to analyze the hospital information data. By means of questionnaire survey, expert experience, mathematical statistics, and in-depth interview, information facilities construction, information resources construction, information scientific research application, management information, and information guarantee are selected as the nodes of the decision tree to evaluate the hospital information level. Construct the structural equation model, standardize the data, extract the weight of each evaluation index, and complete the evaluation of hospital informatization level. The experimental results show that the weight calculation results of this method are basically consistent with the actual results, and the evaluation efficiency is improved.

1. Introduction

With the continuous development of modern information technology, the informatization level of daily operation and management of the hospital has been continuously improved. It has realized the informatization management of outpatient registration, pharmacy, ward, and electronic medical record, which has greatly improved the service level of the hospital [1–3]. With the continuous progress of reform and opening up, China's economic development is getting better and better, the people's material living conditions are basically met, and the living environment conditions are gradually improved. Under the new development background, the ubiquitous medical service in people's daily life has been put forward higher requirements. With the rapid development of information technology, the traditional hospital information management system can not meet people's requirements. Chinese hospitals should be able to keep up with the development and changes of the times, use the latest information technology to establish the hospital information management system, and make the traditional hospital information management mode more scientific and intelligent [4].

Because the medical industry is an information-intensive industry and highly dependent on information processing, the construction of information management mode can ensure the significant improvement of medical system and hospital management level. As the construction of hospital information management is an extremely complex and arduous task, as an extremely important capital construction of modern hospital, it not only includes the management information of human, financial, and material but also strongly supports the whole medical, teaching, scientific research, and other activities supported by patients, so as to ensure the optimization of the hospital's medical environment. Therefore, in order to ensure the construction of hospital informatization, it is necessary not only to constantly change the hospital management system but also to continuously greatly improve the quality and concept of medical staff, so as to ensure the significant improvement of the hospital's management level and service level [5].

Reference [6] puts forward the evaluation method of informatization level based on the neural network. This method combines the frequency analysis method with the opinions of domain experts, constructs the informatization index system based on the research results of informatization

index, and adopts the T-S fuzzy neural network method and MATLAB software analysis to establish the informatization level evaluation model. Reference [7] puts forward the informatization level evaluation method based on the factor analysis method. This method constructs the evaluation index system through the literature reading method, calculates the evaluation weight by the factor analysis method, and compares the informatization level of the research object. Reference [8] proposes an informatization level evaluation method based on the grey clustering model, which determines the informatization level evaluation index system according to the requirements of informatization management, and then designs a questionnaire. Select representative samples for questionnaire survey to obtain relevant information data. According to the characteristics of limited data and large grey scale, the evaluation model is established by using grey clustering evaluation theory. Reference [9] proposed a method for predicting Bundesliga football matches based on machine learning. This paper mainly studies the feasibility of decision tree algorithm, including C4.5 decision tree, bagging integration element algorithm, and random forest algorithm. In order to build models on large datasets, the decision tree algorithm needs to be transformed into a distributed environment to achieve higher model training performance in time without affecting the accuracy of decision tree construction. Reference [10] proposed an enhanced version of distributed decision tree algorithm to achieve better performance in model construction time without affecting accuracy.

In order to evaluate the hospital informatization more accurately, the decision tree algorithm is applied to the informatization level evaluation, and the more accurate evaluation is realized by constructing the decision tree.

The remainder of this paper is organized as follows. Section 2 introduces the construction of decision tree. Section 3 discusses the construction of hospital informatization level evaluation model. Section 4 discusses experiment and analysis. Section 5 presents the conclusions of the study.

2. Construction of Decision Tree

The decision tree algorithm is characterized by high-quality and efficient classification when there are few attribute values. Most decision tree learning algorithms at this stage are variants of the core algorithm, that is, top-down greedy search is used to traverse the possible decision tree space, and common decision tree algorithms ID3, C4.5, C5.0, etc.

There are many kinds of hospital informatization, and the amount of data is large, and the division of membership degree has potential uncertainty. The decision tree generated by the traditional decision tree algorithm is not adaptive to the abrupt data, resulting in cumbersome decision tree structure and inaccurate decision results [11–13]. Therefore, this paper uses the combination of fuzzy theory and ID3 algorithm to analyze the hospital information data. The core principles of fuzzy decision tree mainly include the following points:

(1) Fuzzy processing of indicators: the selection of analysis attributes is the symbol to measure the decision-making model, and the quantification of attribute values is the premise of building the model. The indicators are fuzzy processed by designing fuzzy membership function.

(2) Establishment of fuzzy matrix: the establishment of fuzzy matrix is the basis of constructing fuzzy decision tree. Based on the fuzzification of the index, a fuzzy judgment matrix is established.

(3) Establishment of fuzzy decision tree: the fuzzy information entropy is obtained on the basis of fuzzy matrix, and then the fuzzy information gain FGain is calculated. The fuzzy decision tree is improved on the ID3 algorithm. The information entropy and information gain of the traditional decision tree are fuzzed. Finally, the decision reasoning is obtained through recursive call.

In this paper, the decision analysis model is designed through the improved fuzzy decision tree. The model framework is shown in Figure 1.

2.1. Data Processing. Through questionnaire survey, expert experience, mathematical statistics, and in-depth interview, this paper selects information facilities construction, information resources construction, information scientific research application, management informatization, and information guarantee as the node attributes of the decision tree for evaluating the informatization level of the hospital. The informatization level is selected as the node attribute of the decision tree [14] set as the division of attribute level and n as the center point to distinguish attribute level. The fuzzy membership matrix of attribute A_{ij} (the j-th element of attribute i) at level m_k is C_i, and the matrix element is c_k^j, of which $j = 1, 2, \ldots, p, k = 1, 2, 3$, and n_1 and n_2 are the center points to distinguish the attribute level, respectively.

Due to the differences in the measurement units and value ranking of the analysis attributes selected by the model, in order to overcome the different numerical meanings, this paper designs a membership function combining segmentation and semitriangle to solve the membership of the segmentation level of attribute elements:

When the attribute value is $x > (n_1 + n_2)/2$, the calculation formula of membership degree c_k^j is as follows:

$$\begin{cases} c_1^j(x) = 0.5 + \left(\dfrac{x - n_1}{n_1 - n_2}\right), \\ \\ c_2^j(x) = 0.5 - \left(\dfrac{x - n_1}{n_1 - n_2}\right), \\ \\ c_3^j(x) = 0. \end{cases} \tag{1}$$

When the attribute value is $(n_1 + n_2/2) < x < n_2$, the membership degree c_k^j is calculated as follows:
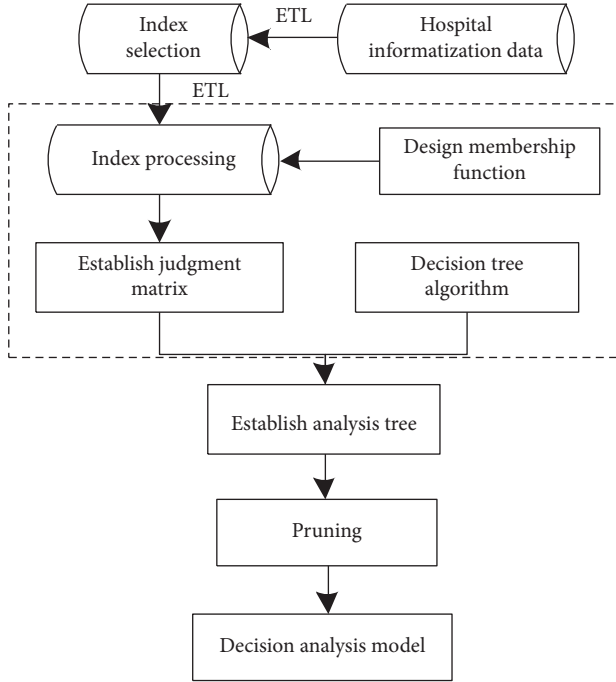
Figure 1: Decision analysis model.

$$\begin{cases} c_1^j(x) = 0, \\ \\ c_2^j(x) = 0.5 + \left(\dfrac{x - n_2}{n_1 - n_2}\right), \\ \\ c_3^j(x) = 0.5 - \left(\dfrac{x - n_2}{n_1 - n_2}\right). \end{cases} \quad (2)$$

When the attribute value is $x < n_2$, the membership degree is $C_i(c_1^j, c_2^j, c_3^j) = (0, 0, 1)$.

Thus, it can be obtained that the fuzzy membership matrix C_i is a $p * k$ order matrix, of which $c_k^j \in [0, 1]$. The specific calculation expression is as follows:

$$C = \begin{bmatrix} c_1^1(x) & c_2^1(x) & c_3^1(x) \\ c_1^2(x) & c_2^2(x) & c_3^2(x) \\ \vdots & \vdots & \vdots \\ c_1^p(x) & c_2^p(x) & c_3^p(x) \end{bmatrix}. \quad (3)$$

2.2. Building Decision Tree. The hospital informatization level evaluation model established in this paper gradually tests the sample node attributes from the root node and walks down the corresponding branches until it reaches the sample node. At this time, the node attributes obtained are the evaluation results of the sample under the node attribute condition [15–17], and the membership value of the node attributes at level m_k is the sum of the membership values of the samples taken, that is,

$$F\big(G\big(c_{m_i}(x)\big)\big) = \sum_{j=1}^{j=p} c_{m_k}^j(x). \quad (4)$$

Thus, the entropy of information level node on level m can be obtained, as shown in the following formula:

$$FH(G) = -\sum_{m=1}^{m=k} \frac{F\big(G\big(c_{m_i}(x)\big)\big)}{\sum_{m=1}^{m=k}\big(FG\big(c_{m_i}(x)\big)\big)} \log_2 \frac{F\big(G\big(c_{m_i}(x)\big)\big)}{\sum_{m=1}^{m=k}\big(FG\big(c_{m_i}(x)\big)\big)}. \quad (5)$$

The fuzzy conditional entropy of node G on node A_i is obtained by fuzzy segmentation of attribute node G and attribute node A_i. The specific calculation formula is as follows:

$$FH\left(\frac{G_i}{A}\right) = -\sum_{m=1}^{m=k} \frac{F\big(A_i\big(c_m(x)\big) \cap F\big(c_m(x)\big)\big)}{\sum_{m=1}^{m=k} F\big(A_i\big(c_m(x)\big)\big)} FH(G \cap A_i). \quad (6)$$

Finally, the corresponding information gain of node A_i on node G is obtained:

$$FGain(A_i, G) = FH(G) - FH\left(\frac{G}{A_i}\right). \quad (7)$$

Through the obtained information gain value, the largest $FGain(A_i, G)$ is selected as the root node of the decision tree, and then each tree is recursively called to gradually locate the branch nodes of the tree. Finally, the fuzzy decision tree for predicting the hospital informatization level is obtained. The decision tree structure is shown in Figure 2.

3. Construction of Hospital Informatization Level Evaluation Model

3.1. Construction of Structural Equation Model. Structural equation modeling, also known as structural equation modeling, is a very good statistical method in social science research. It is also the fastest developing branch in the field of Applied Statistics in recent decades. It has been widely used in the fields of education, economy, management, and other social sciences. The structural equation model constructs a quantitative model including a set of variables and one or more dependent variables. By looking for the internal structural relationship between variables to verify whether the assumptions of a structural relationship or model are reasonable and correct, and if there are problems in the model, we can point out how to modify it. It provides researchers with a quantitative method to verify the theory and provides a method for the expression of abstract variables and the accuracy test of measurement. The structural equation model contains the synthesis of a variety of statistical analysis methods. Factor analysis, path analysis, and multiple regression are special cases of the structural equation model.

There are two kinds of estimation techniques for structural equation models. One is the covariance structure analysis method of chukeding most human likelihood
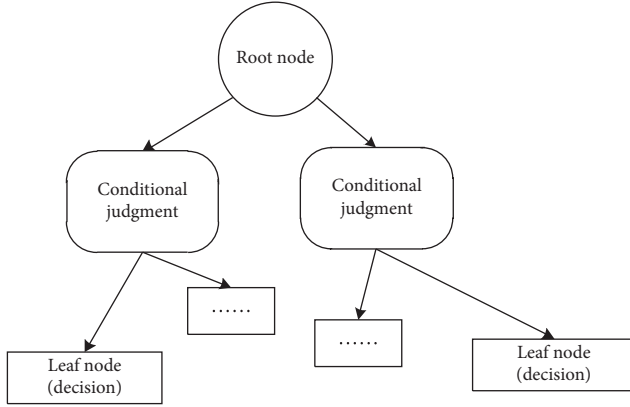
Figure 2: Decision tree structure.

method, also known as "hard modeling," represented by the method, and the other is the variance analysis method based on the partial least-squares method, known as "soft modeling," which is proposed in the structural equation model. According to whether the variable can be measured directly, the variable can be divided into manifest variable (MV) and latent variable (LV). Latent variables refer to the construction of theories or assumptions of great significance in many scientific research. They are variables that cannot be observed directly. Their measurement needs to be realized with the help of explicit variables. Explicit variables are directly measurable variables, also known as indicator variables. At the same time, according to the causal relationship between variables, variables can also be divided into exogenous variables and endogenous variables. The value of exogenous variables (i.e., independent variables) is determined by external factors, and the value of endogenous variables (i.e., dependent variables) is determined by exogenous variables.

In short, structural equation models can be divided into measurement equation and structural equation. Measurement equation is the description of the relationship between potential variables and observation variables, and structural equation is the description of the causal relationship of potential variables. The structural equation model includes measurement model and structural model, in which the structural model is also called the potential variable model.

The measurement model is written as the following equation:

$$X = \Lambda_X \xi + \delta,$$
$$Y = \Lambda_Y \eta + \varepsilon, \tag{8}$$

wherein X and Y are vectors composed of exogenous indicators and endogenous indicators, respectively; Λ_X and Λ_Y represents the relationship between exogenous indicators and exogenous potential variables and between endogenous indicators and endogenous potential variables, that is, the regression coefficient matrix (load matrix) of X to ξ and Y to η; η and ξ represents endogenous potential variable and exogenous potential variable, respectively; and δ and ε represents the error terms of exogenous index X and endogenous index Y, respectively.

The structural model is written as follows:

$$\eta = B + \Gamma\xi + \varsigma. \tag{9}$$

In the formula, η and ξ represent endogenous potential variables and exogenous potential variables, respectively, B and Γ represent the relationship between endogenous potential variables and the influence of exogenous potential variables on endogenous potential variables, respectively, that is, B and Γ are the structural coefficient matrices of η and ξ, and ς represents the residual term of structural equation model, which can not be explained in the equation.

3.2. Advantages of Structural Equation Model

(1) The traditional regression analysis and path analysis essentially ignore the influence of the existence of other dependent variables on a dependent variable. When dealing with the relationship between multiple dependent variables and independent variables, the structural equation model can consider multiple dependent variables and allow the measurement errors widely existing in most mathematical research.

(2) At the same time, the relationship between potential variables and observed variables and between potential variables and potential variables is processed. The structural equation model introduces potential variables into the analysis, considers not only the relationship between potential variables and observation variables but also the relationship between potential variables and potential variables, and verifies whether the structural relationship between variables is reasonable.

(3) It integrates traditional statistical methods such as factor analysis, regression analysis, and path analysis to make up for the shortcomings of traditional statistical methods.

(4) It can analyze more complex structural relationships and deal with the complex situation that an index belongs to multiple factors.

(5) It can estimate the fitting degree of the whole model. In addition to analyzing the parameter estimation with traditional path analysis, researchers can also design the relationship between potential variables, assume different models, and estimate the fitting degree between the whole model and data, so as to find the best model.

3.3. Analysis Steps of Structural Equation Model. The analysis steps of structural equation model are shown in Figure 3.

3.3.1. Model Construction. The structural equation model is a verification method. Generally, it needs to make model assumptions, build theoretical models, and set the relationship between potential variables and observation variables, the relationship between potential variables, and so on.
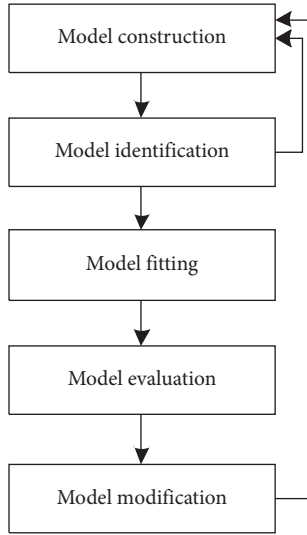
Figure 3: Analysis steps of structural equation model.

3.3.2. Model Identification.
Model identification is to judge whether the model can estimate parameters and whether the unknown parameters summarized by the model have unique solutions. Generally, if a parameter cannot be represented by a known quantity, it is unrecognizable. If a model contains unrecognizable parameters, the model is unrecognizable. The conditions that the model can be identified are as follows: the necessary and insufficient condition for the model to be identified is t rule and the number of data points cannot be less than the number of free estimated parameters t. The necessary condition for model identification is the potential variables in the model have measurement scales. It is a common method to fix a load or variance for potential variables.

3.3.3. Model Fitting.
Try to find the solution of the model and estimate the parameters of the structural equation model to minimize the distance between the implicit covariance matrix of the model and the sample covariance matrix. In structural equation, maximum likelihood method and partial least-squares method are the most commonly used parameter estimation methods.

3.3.4. Model Evaluation.
Investigate whether the solution of the structural equation is appropriate, whether the relationship between the parameters and the hypothetical theoretical model is reasonable, the overall fitting index of the model, and the fitting degree of the model.

3.3.5. Model Modification.
The model is revised on the basis of model evaluation. The correction of the model should also be carried out according to relevant theories. The model cannot be corrected completely by fitting data. It should also consider whether each parameter to be modified into free estimation is reasonable in theory.

3.4. Standardized Treatment.
The measurement unit and order of magnitude of each index of hospital informatization level survey data are different. In order to avoid the impact of dimension on the analysis results, the data are standardized. This study adopts "Z-score standardization" dimensionless processing, and the calculation formula of Z-score standardization is as follows:

$$x'_{ij} = \frac{x_{ij} - \overline{x}_j}{s_j}, \quad i = 1, 2, \ldots, n; \ j = 1, 2, \ldots, p. \tag{10}$$

In the formula, x'_{ij} represents the standardized data, x_{ij} represents the original data, $\overline{x}_j$ represents the average of the j-th index, s_j represents its standard deviation, n represents the number of samples, and p represents the number of indicators.

3.5. Normalization Treatment.
In the face of nonnormal data, several topics can be combined into one topic to make the data close to the normal distribution. In addition, the variables can be normalized in advance. Normalization corresponds to the normal distribution table according to the percentage level of participants. In this study, individual indicators were normalized.

3.6. Evaluation Model of Hospital Informatization Level.
The evaluation model of hospital informatization level is shown in Figure 4.

The description of each variable in Figure 4 is shown in Table 1.

In the summary of the second-order factor model for the evaluation of hospital informatization level, the hospital informatization level is expressed in ξ_1 as an exogenous potential variable. Informatization facilities construction, informatization resources construction, informatization scientific research application, management informatization, and informatization guarantee are, respectively, represented by η_1, η_2, η_3, η_4, and η_5 as endogenous potential variables.

3.7. Index Weight Calculation.
According to the factor load obtained from the high-order factor analysis of the structural equation model of hospital informatization level, the dimensions and indicators are weighted. The specific calculation method is to add the loads of the five dimensions to obtain a sum and then divide the load of each dimension by the sum to obtain the weight of the dimension; that is, the calculation formula of weight W_i is as follows:

$$W_i = \frac{\gamma_i}{\sum \gamma_i}. \tag{11}$$

In the formula, γ_i represents the standardized load of the i-th index or factor.

The comprehensive index value is calculated according to the linear weighting method, and a comprehensive evaluation is made according to the calculation results.
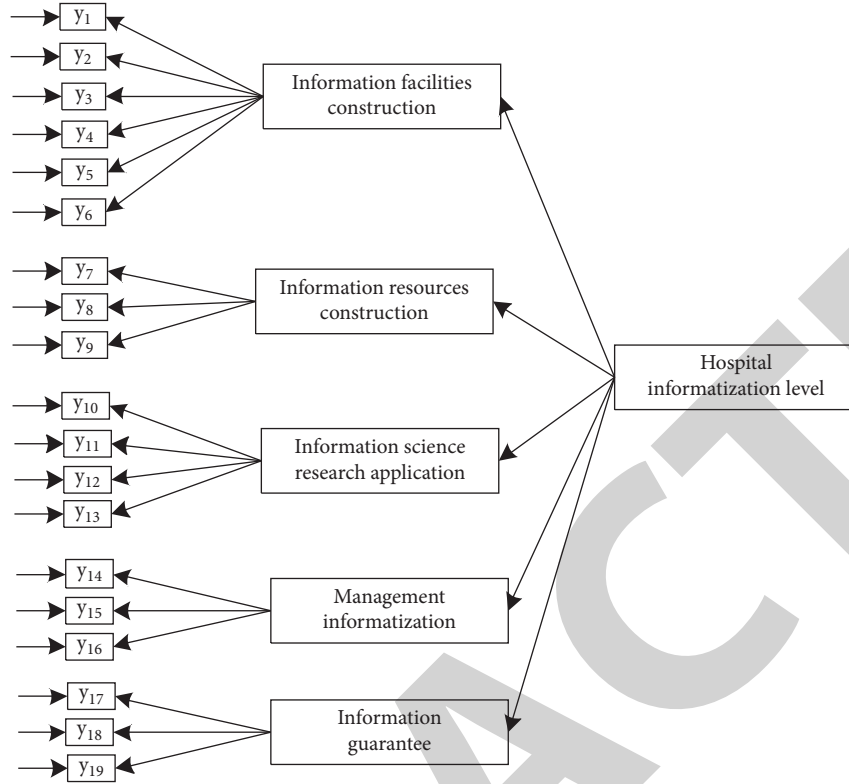
Figure 4: Evaluation model of hospital informatization level.

Specifically, the formula for calculating the comprehensive index of hospital informatization level by using the simple linear weighting method is as follows:

$$H = \sum_{i=1}^{n} P_i W_i. \tag{12}$$

In the formula, P_i represents the dimensionless value of the i-th index, W_i represents the weight of P_i, H represents the total index value of hospital informatization level, and n represents the number of dimensions composed of hospital informatization level.

Therefore, the calculation method of hospital informatization level is to start with specific indicators, calculate them item by item, and finally summarize the results. The specific calculation formula can be expressed as follows:

$$H = \sum_{i=1}^{n} \left(\sum_{j=1}^{m} P_{ij} W_{ij} \right) \times W_i. \tag{13}$$

In the formula, m represents the number of indicators of the i-th constituent dimension of hospital informatization level, P_{ij} represents the value of the j-th indicator of the i-th constituent dimension after standardization, and a represents the weight of the j-th indicator of the i-th constituent dimension.

4. Experimental Verification

4.1. Data Source and Preprocessing. The evaluation of hospital informatization level involves the complex relationship between potential variables and observation

indicators, as well as the relationship between potential variables. The structural equation model introduces potential variables and considers explicit and implicit factors and their relationship. Compared with traditional statistical methods such as factor analysis and regression analysis, it can make the selection of indicators and the construction of model more systematic and scientific. Therefore, using the structural equation model to evaluate the level of hospital informatization can improve the scientificity, objectivity, and systematicness of evaluation indicators and make the evaluation structure more scientific.

4.1.1. Data Sources. The survey data of this study come from one province and city in China. The hospitals surveyed include general hospitals, class III hospitals, and special disease treatment hospitals. A total of 33 questionnaires were distributed and 337 were recovered, of which 337 were valid.

4.1.2. Data Interpolation Preprocessing. Missing value is the missing data item in the questionnaire sampling survey, also known as no answer data, missing data, or incomplete data. In structural equation analysis, if there are missing values, warning messages will appear during model estimation, and some parameters of the model cannot be estimated. Therefore, it is necessary to deal with the missing values before structural equation analysis. The methods of missing value processing include column

Table 1: Variable interpretation of evaluation model.

Potential variable	Observation variable	Observation variable interpretation
Information facilities construction η_1	Rate of personal computers owned by hospital workers y_1	Proportion of hospital workers with personal computers
	Allocation ratio of multimedia conference room y_2	Proportion of multimedia conference rooms (such as computers and projectors) in the total number of conference rooms
	Wireless network coverage y_3	Network access to all buildings of the hospital
	Number of network interfaces y_4	Overview of network access points for cabling
	Number of wireless APS deployed in the hospital y_5	Number of wireless APS uniformly deployed by the hospital
	Total bandwidth of network outlet y_6	Sum of network export bandwidth
Information resources construction η_2	Electronic resources y_7	Number of electronic resources provided by the hospital
	Multimedia CD resources y_8	Various multimedia CD resources owned by the hospital
	Resource pool capacity y_9	The total capacity of various resource banks for medical resource learning uniformly constructed by the hospital
Information science research application η_3	Total number of e-mail users y_{10}	Number of accounts of all users of the e-mail system opened by the hospital
	Proportion of multimedia-assisted medicine y_{11}	Proportion of multimedia medical use in the total number of medical treatment in the last year
	Frequency of e-learning y_{12}	According to the further education requirements of the hospital, the number of network learning by hospital workers accounts for the proportion of the total number of learning
	Number of scientific research-related information published on the network y_{13}	Number of scientific research-related information published on the Internet in recent year
Management informatization η_4	Business process informatization y_{14}	Informatization degree of core business of hospital key business departments
	Information sharing level y_{15}	Information sharing degree of core business of the department
	Comprehensive data processing and decision support level y_{16}	Information level of various information query and data analysis in the hospital
Information guarantee η_5	Annual informatization capital investment y_{17}	Annual hospital fund investment for information construction and operation and maintenance
	Person times of informatization training y_{18}	It refers to the number of people participating in various information system use and computer skill training organized by the hospital
	Number of people engaged in information work y_{19}	It refers to the number of people who are fully engaged in hospital information construction, technical support, operation, and maintenance

deletion method, pair deletion method, mean interpolation method, random interpolation method, maximum likelihood estimation, multiple interpolation method, and so on. Among them, the multiple interpolation method is based on Bayesian theory, which is widely used because it overcomes the defects of other interpolation methods (such as the mean interpolation method). By simulating the distribution of missing data and filling each missing data with any one of the possible datasets, it can well maintain the relationship between variables. This study uses multiple interpolation to process the missing data.

4.2. Weight Calculation Comparison. The weight calculation results play an important role in the whole evaluation process, so it is necessary to verify the reliability of the weight calculation method in this paper. Based on the above data results, the calculation results of this method are compared with the actual weight results. The comparison results of weight calculation are shown in Table 2.

From the comparison results of weight calculation in Table 2, it can be seen that the weight calculation results of this method are basically consistent with the actual results, and there is only a calculation error of 0.01. Therefore, this method can effectively evaluate the informatization level of the hospital.

4.3. Comparison of Evaluation Time. In order to further verify the effectiveness of the proposed evaluation method, taking the evaluation time as the experimental comparison index, this method is compared with the neural network method proposed in reference [6] and the factor analysis method proposed in reference [7]. The comparison results of the three methods are shown in Figure 5.

It can be seen from the comparison results of evaluation time in Figure 5 that with the continuous increase of evaluation data, the evaluation time of the three methods increases, but the evaluation time of this method is much lower than that of the two traditional comparison methods. Therefore, it shows that this method can shorten the evaluation time and improve the evaluation efficiency.

TABLE 2: Comparison results of weight calculation.

| Index	Weight calculation results	
	Paper method	Actual value
Rate of personal computers owned by hospital workers y_1	0.14	0.15
Allocation ratio of multimedia conference room y_2	0.12	0.12
Wireless network coverage y_3	0.17	0.17
Number of network interfaces y_4	0.11	0.11
Number of wireless APS deployed in the hospital y_5	0.12	0.12
Total bandwidth of network outlet y_6	0.11	0.11
Electronic resources y_7	0.37	0.37
Multimedia CD resources y_8	0.30	0.30
Resource pool capacity y_9	0.33	0.33
Total number of e-mail users y_{10}	0.38	0.38
Proportion of multimedia-assisted medicine y_{11}	0.28	0.28
Frequency of e-learning y_{12}	0.34	0.34
Number of scientific research-related information published on the network y_{13}	0.22	0.22
Business process informatization y_{14}	0.39	0.39
Information sharing level y_{15}	0.32	0.32
Comprehensive data processing and decision support level y_{16}	0.29	0.29
Annual informatization capital investment y_{17}	0.42	0.42
Person times of informatization training y_{18}	0.35	0.35
Number of people engaged in information work y_{19}	0.33	0.33
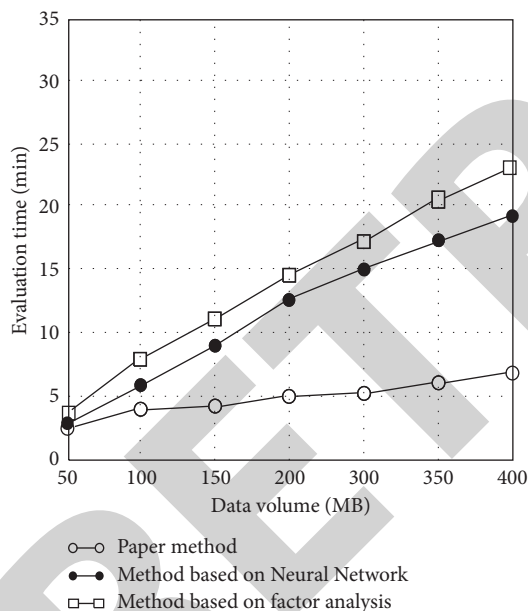
FIGURE 5: Comparison results of evaluation time.

5. Conclusion

In order to improve the reliability of hospital informatization level evaluation, a hospital informatization level evaluation model based on the decision tree algorithm is proposed to verify the performance of the method from both theoretical and experimental aspects. This method has high weight calculation accuracy and short evaluation time in the evaluation of hospital informatization level. Compared with the actual weight calculation results, this method is basically consistent with the actual calculation results. Compared with the two comparison methods, the evaluation time of this method is significantly reduced, and the shortest time is only 2.5 min.

Data Availability

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

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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