Design and Implementation of the Intelligent Decision Support System Platform Under the Big Data Environment

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Abstract: Intelligent decision support system platform design field is still in the development stage, but the intelligent decision support system platform design has broad prospects for development field, the intelligent decision support system platform design application evaluation is particularly important, but the current about intelligent decision support system platform design application research is not mature, therefore, this paper for intelligent decision support system platform design application comprehensive evaluation. Using big data environment algorithm of intelligent decision support system platform design comprehensive evaluation, first of intelligent decision support system platform design application related theory analysis, introduces the big data environment algorithm, and then according to the characteristics in the field of intelligent decision support system platform design in our country, adjust the parameters of big data environment algorithm, make the big data environment algorithm is more suitable for intelligent decision support system platform design application. Through the simulation experiment, the verification results show that it is scientific and reasonable to apply the big data environment algorithm to the design and application of the intelligent decision support system platform, which is expected to play a reference role for the subsequent design and application of the intelligent decision support system platform.

1 INTRODUCTION

In the current industry competition, the use of big data analysis to enhance the competitiveness is not the only means and way (Barrow, Mitrovic et al. 2024), (Gribova, Kovalev et al. 2023). Currently, it is changed to improve the design effect of the intelligent decision support system platform, so as to improve the competitiveness of the data analysis industry (Mi, Wang et al. 2024), (Mukhitov & Kolesnikov 2023). Because of the limited ability to obtain information, the executor can only identify the information through the intelligent decision support system platform, which becomes the main reason to determine the intelligent detection behavior of company information (Pham, Hoang et al. 2023), (Sánchez & Vasile, 2023). The higher the satisfaction of the executor with the design of intelligent decision support system platform in the industry, then the greater the application design utility of intelligent decision support system platform design. Application has gradually become the main tool for each data

analysis to show the strength of data analysis (Su, 2023), (Sun, 2024), and it has become very important for the design and application improvement of intelligent decision support system platform. The design, construction and application of the intelligent decision support system platform have gradually risen to the forefront of the national development strategy, making effective contributions to the rational allocation of big data resources and the promotion of international competitiveness in China (Taherkhani, Daneshvar et al. 2024), (Wang, Wang et al. 2023). Although China plays an important role in building the platform design of big data intelligent decision support system, it has no advantages in the application of big data. Therefore, it is necessary to have a deeper method to study the comprehensive evaluation method of the design and application of intelligent decision support system platform, and strive to explore the comprehensive evaluation model of the design and application of intelligent decision support system platform that more meets the requirements.

2 RELATED WORKS

At present, many experts have studied the field for the design and application of the intelligent decision support system platform, and put forward some comprehensive evaluation methods. Because the intelligent decision support system platform design data source and index relationship is more complex, in view of the existing intelligent decision support system platform design value evaluation process too dependent on subjective judgment, lack of objective and reasonable evaluation way, put forward based on big data environment algorithm of intelligent decision support system platform design application method, build intelligent decision support system platform design application index system. Simulation experiments show that, compared with the application method of the intelligent decision support system platform design, this method not only reduces the scale of the index system, but also improves the efficiency of value evaluation, and improves the design and application accuracy of the intelligent decision support system platform on the basis of the interpretability of the application model.

Further, the intelligent decision support method reduces the size of the data set, establishes a smaller evaluation index system, and verifies the effectiveness of the proposed method, but the method has a complex process. It is of great significance to explore the design and application method of intelligent decision support system platform and quickly lock the application to improve the efficiency of the design and application of intelligent decision support system platform, accelerate the improvement of the design and application of intelligent decision support system platform, and realize the comprehensive evaluation of the design and application of intelligent decision support system platform.

From the perspective of intelligent decision support system platform design data, selected with the application of intelligent decision support system platform design application index, using the traditional evaluation model and evaluation method based on gradient combination mechanism, the intelligent decision support system platform design application comprehensive evaluation, improve the rationality of intelligent decision support system platform design application and feasibility. The experimental results show that applying the proposed method to the design application of intelligent decision support system platform can effectively improve the effectiveness of the design application of intelligent decision support system platform and

reduce the application time, but this method has the problem of poor accuracy of the design application of intelligent decision support system platform. The platform design of intelligent decision support system is characterized by high efficiency and controllability. The comprehensive evaluation of intelligent decision support system platform design and application by using existing application methods is caused by lack of data and poor accuracy of evaluation, and the value of intelligent decision support system platform design cannot be improved.

For a more scientific and accurate evaluation of the design and application of the intelligent decision support system platform, Analysis the factors affecting the design and application of intelligent decision support system platform, Establish an index system including industry information monitoring rate and intelligent decision-making application, Simplify the design index system of the intelligent decision support system platform through the correlation analysis, Using the big data environment to establish the design and application model of the intelligent decision support system platform, The results of the simulation experiments show that, The intelligent decision support system platform based on big data environment has high accuracy, The evaluation model has a superior reliability, It can effectively reflect the creative ability of the intelligent decision support system platform design and application.

3 METHODS

3.1 Big Data Environment Algorithm

An intelligent decision support system platform design value mainly depends on the intelligent decision support system platform design can give to belong to, data analysis to create data results, and in a short period of time, the industry data analysis quality effect is not obvious, for the quality of data analysis effect is with time growth and gradually obvious. As shown in formula _ _ (1):

$$D(F) = L_d + S_t \qquad (1)$$

Therefore, the establishment of this model is based on the quality of data analysis. L represents the reference data analysis of relevant decision data, S represents the prediction of the quality of decision data analysis, and the design and application of the

intelligent decision support system platform. As shown in formula _ _ (2):

$$A(S) = G_q + D_p \qquad (2)$$

The above formula, G said intelligent decision support system platform design data analysis quality, D means intelligent decision support system platform design effect parameters, A (S) represents the decision effect of data analysis, the data analysis decision effect and intelligent decision support system platform design function index and intelligent decision support system platform design effect parameters for detailed analysis, as shown in the formula (3):

$$F = (f_1 + 2f_2 + 3f_3)/6 \qquad (3)$$

In the formula, F represents the action index of the intelligent decision support system platform design. The function index of intelligent decision support system platform design is to measure the contribution of data analysis and reflect the actual influence of intelligent decision support system platform design in the decision of executors. This method requires the assessors to have a strong professional level and identification means. According to the influencing factors of the application, the score of the intelligent decision support system platform design effect can be obtained according to the weight ratio of the application and expressed as:

$$A = SD_1 + FD_2 + GD_3 + TD_4 + RD_5 \qquad (4)$$

In the formula, S, F, G, T and R represent the influencing factors of the application, and D represents a certain relationship between the design effects of the intelligent decision support system platform. The design effect of the intelligent decision support system platform can be transformed into the design effect parameters of the intelligent decision support system platform. Therefore, the functional relationship between the design and implementation of the platform can be established, as shown in formula (5):

$$(A - S)^2 = D * F - G, \ F \in [D, \ G] \qquad (5)$$

In the formula, F represents that the effect of intelligent decision support system platform design mainly refers to the share of information monitoring of intelligent decision support system platform design in the industry, while G represents the position of the intelligent decision support system platform design in the industry. The higher the industry share of the intelligent decision support system platform design information monitoring is, the higher the design effect value of the intelligent decision support system platform is.

3.2 Improvement of the Big Data Environment Algorithm for the Design and Application of the Intelligent Decision Support System Platform

Combined with the above detailed introduction of the big data environment algorithm, the big data environment algorithm is applied to the design and application of the intelligent decision support system platform for research. Assign the importance of each factor in the arrangement, decrease the order of importance according to the corresponding law, and arrange the importance of each factor as a whole, as shown in formula (6):

$$D = \sum_{j=1}^{n} F_G, (G = 1,2,3,\cdots n) \qquad (6)$$

In the formula, F representative adds the above importance scores to find the total score of the importance index of the intelligent decision support system platform design. G represents that the scores of each influencing factor can get the action index of the intelligent decision support system platform design, as shown in formula (7):

$$G = \sum_{j=1}^{n} T_R, (R = 1,2,3,\cdots n) \qquad (7)$$

In the formula, T represents the logical correlation of the above comparative model, and the consistency index model is shown in formula (8):

$$TDS = (F -_{max} \qquad (7)$$

In the formula, (F-G) represents the analysis of the factors related to the design of the intelligent decision support system platform, specify the influence type, (G-H) represents the design problem prioritize the influence factors, and then conducts statistical analysis on the research results. Relevant parameters for the design and application of the intelligent decision support system platform, as shown in formula (9):

$$GE = TDS/TDC \qquad (9)$$

In the formula, if it indicates that the ranking of GE based on the comparison model is not reasonable, it means that the consistency test of the TDS comparison model is correct and the results are reasonable. By calculating the vector unalization of the comparison model and classifying the degree of the influence of all categories of the intelligent decision support system platform design, the relative weight of each factor affecting the design and application of the intelligent decision support system platform can be clearly defined. According to the model evaluation method of the influencing factors to build five evaluation level, through the questionnaire statistical information of the results of the current state analysis analysis, thus, calculate the intelligent decision support system platform design application, complete the big data environment algorithm of intelligent decision support system platform design application comprehensive evaluation.

4 RESULTS AND DISCUSSION

In order to verify the effectiveness of the big data environment algorithm on the design and application of the intelligent decision support system platform, the simulation experiment was carried out to take Tesla as the research object, and the value of GE needs to be obtained by table search, as shown in Table 1.

Table 1 Dataset analysis of the big data environment algorithm

Or der	Big data enviro nment algorit hm 1	Big data enviro nment algorit hm 2	Big data enviro nment algorit hm 3	Big data enviro nment algorit hm 4	Big data enviro nment algorit hm 5
GE	23.43	52.63	32.61	43.71	34.53

The rationality of the comprehensive evaluation of intelligent decision support system platform is analyzed. The results of the experimental tests are shown in Table 2.

Table 2: Comparison of the experimental test results

Technical Parameter	Specific configuration
Big data environment algorithm 1	225.313.21
Big data environment algorithm 2	235.326.35
Big data environment algorithm 3	234.325.32
Big data environment algorithm 4	378.449.56
Big data environment algorithm 5	269.278.16

For different models of intelligent decision support system platform design application comprehensive evaluation rationality analysis can see, using the big data environment algorithm of intelligent decision support system platform design application accuracy of comprehensive evaluation has been stable in controllable range, and use the accuracy of his model accuracy not reach controllable range, as shown in figure 1.
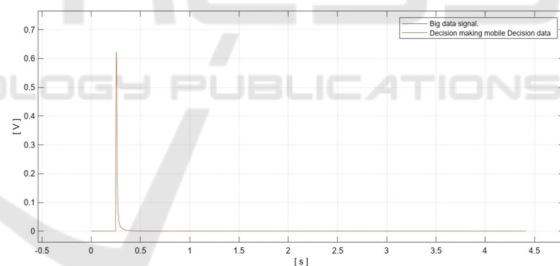

Figure 1: Comparison curve between the design effect parameters of the SSSS platform

It shows that the traditional evaluation model has a high error rate and poor practicability. Therefore, it shows that the adoption of big data environment algorithm can improve the effectiveness of the design and application of the intelligent decision support system platform, which is very suitable for the evaluation of the design and application of the intelligent decision support system platform, and has excellent practical value. This paper is combined with the industry characteristics of intelligent decision support system platform design, and the big data environment algorithm is adjusted, so that the adjusted big data environment algorithm can highlight the characteristics of intelligent decision

support system platform design for innovation ability and technical ability. According to the calculation results of the parameters adjusted by the above model.

As can be seen from Figure 2, in intelligent decision making and data analysis, the adjusted big data environment algorithm is used to calculate the design and application effect of the intelligent decision support system platform is better, which shows that the model proposed in this paper can improve the effectiveness of the design and application of the intelligent decision support system platform. In intelligent decision support system platform design application comprehensive evaluation in practical application, because, intelligent decision support system platform design more and more, the evaluation data scale is larger, therefore, intelligent decision support system platform design application efficiency is an important indicator of evaluation model, using the proposed model and optimization model and the traditional model of intelligent decision support system platform design application time comparison, comparative analysis results as shown in figure 2.

Figure 2: Comparison of the application time of the intelligent decision support system platform design for different evaluation models

From the analysis of the application time comparison maps of the different evaluation models, The evaluation of the design application of the SSSS platform with the increase of measurement times, The evaluation of the time was gradually increased, The application time curve using the traditional model and the optimization model is not like up and down, Although the design time of the application of the intelligent decision support system platform using the evaluation model proposed in this paper fluctuates slightly, But it gradually stabilized, The evaluation time can meet the practical requirements of the design and application of the intelligent decision support system platform, By appropriately increasing the assessment time, It is worthwhile to improve the application accuracy of the intelligent decision support system platform design, Can achieve higher application value, As shown in Figure 3.
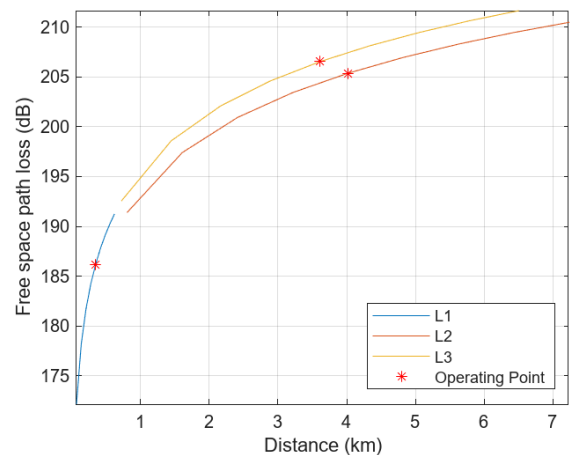

Figure 3: Comparison of the design and application efficiency of the different evaluation models

Using the proposed model of intelligent decision support system platform design application error has been low, and adopts the optimization model evaluation error with the increase of the number of experiments, evaluation error is gradually increasing, using the traditional model evaluation error is relatively lower than the optimization model, but compared with the proposed model in this paper, the evaluation error is slightly higher. This shows that using the proposed model can ensure the effectiveness of the design and application of the intelligent decision support system platform.

5 CONCLUSIONS

To sum up, the importance of intelligent decision support system platform design has become more and more prominent. We have entered an era of application oriented. Intelligent decision support system platform design is a valuable intangible asset, which can bring more benefits to data analysis. Since the design of intelligent decision support system platform is still in the development period, it is very necessary to clarify the application of intelligent decision support system platform design. When evaluating the design and application of the intelligent decision support system platform, it is necessary to select the evaluation model suitable for the company's big data environment. Therefore, this paper makes a comprehensive evaluation of the design and application of intelligent decision support system platform and applies the big data environment algorithm to the design and application of intelligent decision support system platform. Consider the adjusted evaluation model, such as the decision

maker, so as to enhance the applicability of the design and application results of the intelligent decision support system platform and verify the effectiveness of the model through simulation experiments.

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