Hindawi
Scientific Programming
Volume 2021, Article ID 6193743, 9 pages
https://doi.org/10.1155/2021/6193743

Research Article

Research on Optimization Path of Intelligent Pension Industry Based on Intelligent Fusion Algorithm of Multisource Information

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Received 9 September 2021; Revised 26 October 2021; Accepted 12 November 2021; Published 1 December 2021

Academic Editor: Jamil Hussain

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Accurate quantitative evaluation of the supervision effect of the smart pension industry can reduce the cost of social pension. The traditional methods cannot effectively classify the regulatory risk levels of the smart pension industry. Therefore, this paper proposes a multisource information intelligent fusion algorithm based on the intelligent pension industry optimization path research. Firstly, we establish the principal model of the supervision effect system of the intelligent elderly care industry optimization path and describe the risk level of the supervision effect from different levels. We build the intelligent service platform of the intelligent elderly care training, calculate the weight vector of the supervision risk of the optimization path at all levels, and determine the attribute type of the supervision effect at all levels. Finally, we calculate the maximum influence value of the supervision effect of the intelligent elderly care industry optimization path and use this value to complete the quantitative evaluation of its supervision effect. Simulation results show that the proposed method can evaluate the regulatory effect of smart pension industry and improve the precision of the regulatory effect of smart pension industry effectively.

1. Introduction

The aging degree is rapidly increasing [1, 2], the old-age service industry is gradually rising, and the intelligent old-age care industry is gradually evolving into a most potential industry. The pressure on the forms of family pension and government pension services is increasing day by day, and the intelligent pension model is strongly advocated. With the arrival of the "Internet Plus" era, intelligent health products and platforms will provide corresponding services for the elderly through cloud methods, and the intelligent fusion algorithm based on multisource information will have a far-reaching impact on the development process of the healthy and intelligent pension model [3]. Fusion algorithms are used in different ways to enhance the functionality of machine learning algorithms. For instance, they could be used to create a single solution by combining multiple solutions generated by ML algorithms, referred to as data fusion [4]. Similarly, image fusion is used to generate fewer images or a single image with more information and plays an important role in different computer vision applications [5]. In the area of heterogenous data fusion, unified data modeling is one of the essential steps, which provides a global data structure for holding and fusing data from heterogenous sources [6]. The ever-changing "Internet Plus" environment has brought an ideal opportunity for transformation to the elderly care service industry. Only by closely following the information frontier, proficiently applying the Internet, big data, Internet of Things, cloud computing, and other high-tech technologies, and optimizing the path of the intelligent elderly care industry, can we fundamentally promote the development of the modern elderly care service industry and realize the intelligentization and informatization of the industry.

Intelligent integration of multisource information is not only an important technical support for the elderly care service industry but also a key link to accelerate the transformation of industrial model. Beknazarov and Rustamov [7] reviewed existing pension services in developed and developing countries, reviewed the experience of developing and developed countries in organizing pension systems, and made recommendations for further improvement of national pension systems in the context of the global economy. In addition, they also made a brief comparison of the average pension indicators of countries in the world. Reference [8] aims to understand the quality management methods of medical rehabilitation services in Germany's statutory pension insurance scheme. In the 1990s, the German Statutory Pension Scheme launched a rehabilitation quality management program, which needs to be developed. The main objectives of quality management in rehabilitation nursing are quality control and quality improvement. To achieve these goals, five main quality measurement tools were used: treatment service classification, rehabilitation intervention criteria, patient surveys, peer review, and survey of care structures. These tools assess the structure and process quality of rehabilitation care as well as all aspects of rehabilitation outcomes. As a result, the quality of rehabilitation care has become more measurable and transparent and can be improved on a well-founded basis. These measurements allow for comparisons and benchmarking of rehabilitation facilities, thereby creating incentives for quality improvement.

The development and implementation of quality management measures in in-patient and out-patient medical rehabilitation facilities is an ongoing process and extends to other rehabilitation areas. The aging of the elderly could be reduced and better health could be maintained by physical activities such as aerobic exercises, strength training, and flexibility training. Cooperation with health service centers, surrounding hospitals, and designated physical examination institutions to establish electronic files may help to timely discover health problems. This helps to focus on monitoring users with higher risk of illness. Use of wearable equipment may help to predict the development trend of users' physical conditions and to timely give treatment plans and update health status information.

The main contributions of the paper include the following:

(1) We establish the principal model of the supervision effect system of the intelligent elderly care industry optimization path and describe the risk level of the supervision effect from different levels.
(2) We build the intelligent service platform of the intelligent elderly care training, calculate the weight vector of the supervision risk of the optimization path at all levels, and determine the attribute type of the supervision effect at all levels.
(3) We calculate the maximum influence value of the supervision effect of the intelligent elderly care industry optimization path and use this value to complete the quantitative evaluation of its supervision effect.

2. Intelligent Endowment Industry

2.1. Principal Model of Supervisory Effect System for Intelligent Pension Industry. In the process of establishing the principal model of the supervision effect system of the intelligent pension industry, firstly obtain the historical supervision sample of the supervision effect system of the intelligent pension industry [9], obtain the transfer sequence of supervision effect of the intelligent pension industry and the risk factors of target supervision [10], calculate the weight of each factor to the supervision effect, conduct risk measurement, and establish the principal model of the supervision effect system of the intelligent pension industry optimization path. The specific process is as follows.

Safety regulation in the optimization path of the smart pension industry is regarded as a node of the graph [11], and the directed edges between different regulations can be described by the following formula:

$$A_G = (S_1, S_2, S_3, S_4 \ldots S_n), \tag{1}$$

where S_1 represents the known regulatory set in the optimization path of smart elderly care industry [12]; S_2 represents the set of directed edges; S_3 represents the initial regulatory set; and S_4 represents the target regulatory set. The transition probability from the intelligent elderly care industry optimization path regulatory S_n to regulatory S_{n-1} is regarded as the one-step success probability P_i.

Assuming that there is a group of regulatory transfer sequence $S_1, S_2, \cdots, S_n$ for the optimization path of smart pension industry, making $(S_i, S_{i-1}) \in \tau$, $0 \leq i \leq n-1$ and meeting $S_0 \in S_s$ and $S_n \in S_0$, it is defined as a path; then under a certain path, the success probability of target regulation is calculated by the following formula:

$$P_j = \prod_{i=1}^{n} P_{ji}, \tag{2}$$

where P_{ji} represents the success probability of one-step supervision. Use formula (3) to obtain the risk factors after the target supervision is successful:

$$R = \prod_{i=1}^{m} \left[P_j \times \left(\sum_{i=1}^{n} C_{ji} \right) \right], \tag{3}$$

where C_{ji} represents the consequence of one step, n represents the number of supervision on the path, and m represents the number of steps of the path. Use formula (4) to calculate the supervision success probability of the optimization path of the smart elderly care industry:

$$P_i = \frac{\omega U_i \times \delta E_i \times \gamma K_i \times \theta\, \mathrm{PR}_i / \lambda\, \mathrm{RE}_i}{\sum_{i=1}^{m} \left(\omega U_i \times \delta E_i \times \gamma K_i \times \theta\, \mathrm{PR}_i / \lambda\, \mathrm{RE}_i \right)}, \tag{4}$$

where P_i represents the success probability of system supervision i, U_i represents the difficulty of using system supervision FF, E_i represents the current average exposure degree of the system supervision i, K_i represents the knowledge level, PR_i represents the proficiency, RE_i represents the current repair degree of the system supervision i, m represents the number of system supervision, and ω, δ, γ, θ, and λ, respectively, represent the weight of each factor on the success probability. Use formula (5) to establish the principal model of the intelligent elderly care industry optimization path supervision effect system:

$$Y = \rho(f) \sum_{K_i}^{E_i} \frac{\lambda \, \mathrm{RE}_i \times \theta \, \mathrm{PR}_i}{(\omega\lambda \, \mathrm{RE}_i \times \theta \, \mathrm{PR}_i)} \times F(P_i), \tag{5}$$

where $F(P_i)$ represents the weight matrix of each risk factor and $\rho(f)$ represents the consequences of each regulatory impact.

In the quantitative evaluation of the regulatory effect, it is necessary to describe the regulatory risk levels of the smart pension industry from different levels and calculate the weight vectors of the regulatory risk of the smart pension industry and the maximum impact of regulatory consequences. But the traditional method cannot divide the risk level of the old system effectively and cannot calculate the weight of the regulatory risk and the maximum impact of the regulatory consequences accurately, which reduces the accuracy of the assessment.

2.2. Intelligent Service Platform for Physical Ability Training. On the basis of the principal model of the supervision effect system for the optimal path of the smart pension industry, an intelligent service platform for smart pension physical fitness training shall be established. The platform fully integrates the Internet with a series of intelligent small programs based on the concept of upward centralization of data and downward expansion of services, carries out large-scale integration of resources on the basis of information database, and develops service functions while ensuring the quality of service operation. Based on the digital platform of intelligent fusion algorithm of multisource information, the platform selects the required services through the website login, function selection, and other items in the form of intelligent small programs and obtains the required information by using cloud computing technology [13, 14].

2.2.1. Intelligent Medical Service System. Through the establishment of electronic health records of users covering names, ages, contact information, historical cases, residential addresses, health status, and other relevant contents [15], the service takes the monitoring data of the daily physical capacity indicators of the elderly in the community health service centers, surrounding hospitals, and cooperative health institutions as the basis for early warning and divides the health grades of the elderly users, so as to timely discover health problems and focus on monitoring the users with higher disease risk grades. The wearable equipment shall be used to collect and analyze the relevant health index data of users after physical fitness training in real time, and the development trend of users' physical conditions shall be predicted in the background of the system, the treatment plan shall be given in a timely manner, and the health status information in the electronic health archives shall be updated [16, 17]. If the health monitoring data fall within the normal scope, the daily monitoring results and medical health knowledge shall be pushed for the users in the form of short messages; if the health monitoring data belong to the abnormal range, the information will be pushed to the community health service center, and the diagnostic results shall be given in combination with the historical conditions of the patients, and the confirmation opinions on making appointments shall be provided. When users have mobility problems, they can apply for online appointment registration and on-site regular inspection services. The flow of the intelligent healthcare system is shown in Figure 1.

2.2.2. Physical Training Service System. As a training mode to tap the potential of physical function, physical fitness training is of great importance to the improvement of the whole sports ability. According to the health grades of the elderly users [18], the physical training system is divided into three interrelated and interacting subsystems, namely, basic physical training, special physical training, and comprehensive physical training, as shown in Figure 2.

The core part of the physical training service system is the basic physical training at the most basic level of the "pyramid" physical training system. The left part of Figure 2(a) is the main training content, and the right part is the guiding basis for making the training more scientific and systematic. The special physical training module is the special training carried out according to the different pain points of users and on the basis of certain basic physical training in light of the characteristics of diseases. The two-level anti-interference physical training aims to adapt to the external environment and enhance the adaptability of elderly users to various external factors (Figure 2(b)). The comprehensive physical training shown in Figure 2(c) belongs to the physical training level of the highest gradient of the service platform, so as to achieve the skillful, intensified, and internalized physical training.

2.2.3. Management System of Intelligent Elderly Care Industry Service Platform. The platform management system further perfects the whole service platform system according to the universality and specialty of the platform. By updating the data of the service platform in real time and conducting dynamic management of the platform, the system enables the service status to be accurately and timely fed back. It enables the elderly users to select the required services by using the intelligent small program carrier under the Internet Plus environment, provides corresponding services via the electronic worksheet of the platform, and achieves the construction goal of the platform for network reservation and entity services. And timely return visits to the degree of satisfaction of the service items in order to facilitate subsequent optimization and improvement. The service platform-based management system processing flow is shown in Figure 3.

3. Quantitative Evaluation of Supervision Effect

3.1. Establishment of Fuzzy Risk Assessment Set Membership Matrix. In the process of quantitative assessment of the regulatory effect of the smart pension industry, the regulatory effect of the smart pension industry is divided into different levels based on the fuzzy theory, the regulatory

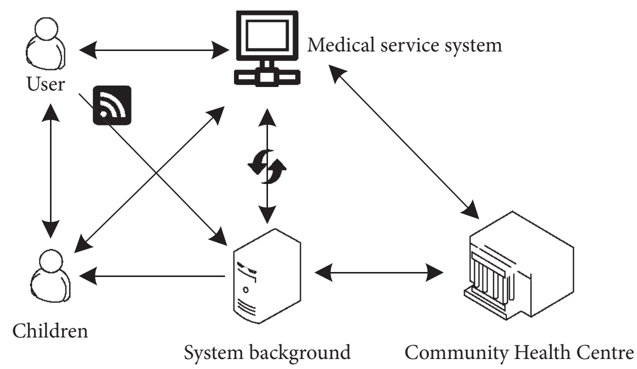

Figure 1: Flowchart of intelligent medical service system.

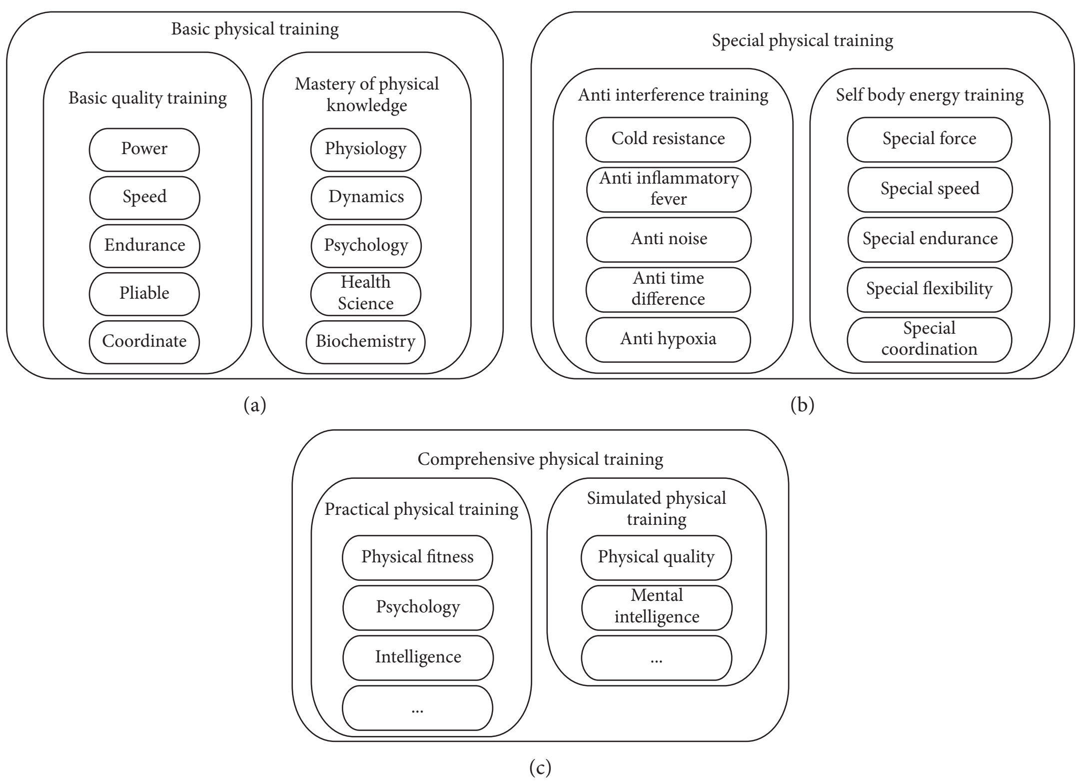

Figure 2: Functional interface design diagram of physical training service system. (a) Functional interface design for basic physical fitness training. (b) Functional interface design for specific physical fitness training. (c) Functional interface design for integrated physical fitness training.

effect grades of each level are calculated, the fuzzy mapping of risk factors is established, and the weight vectors of the regulatory effect evaluation set indicators of each level are obtained. The specific process is described as follows.

First, a factor set of regulatory effects on the intelligent pension industry shall be established, which can be expressed by the following formula:

$$A = \{a_1, a_2, \cdots, a_n\}, \tag{6}$$

where n represents the number of elements in the factor set. Different evaluation sets are established for the factors at all levels, which are expressed by the following formula:

$$B = \{b_1, b_2, \cdots, b_m\}, \tag{7}$$

where $m$represents the number of corresponding elements, refer to the evaluation set to evaluate and analyze the factors in the factor set. A is the evaluation factor, and B is the evaluation result. The fuzzy mapping is formed by the following formula:

$$f\colon A \longrightarrow F(B), \tag{8}$$

where $F(B)$ represents the whole fuzzy set on B; then:

$$a_i \longrightarrow f(a_i) = (p_{i1}, p_{i2}, \cdots, p_{im}), \tag{9}$$

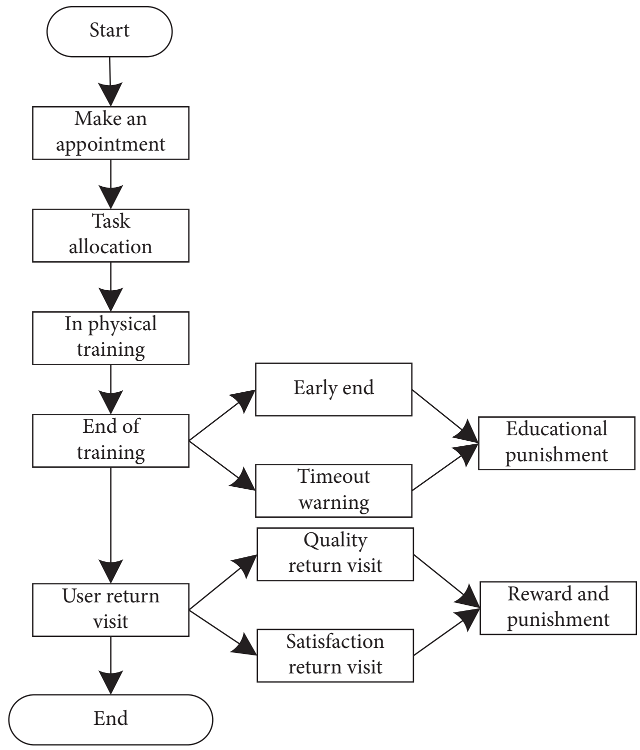

FIGURE 3: Process flowchart of intelligent pension industry intelligent service platform management system.

where mapping f represents the degree of support of regulatory effect factor a_i for each comment in different evaluation sets, and the membership vector of regulatory effect factor a_i to evaluation set B is expressed by the following formula:

$$\begin{aligned} P_i &= (p_{i1}, p_{i2}, \cdots, p_{im}), \\ i &= 1, 2, \cdots, n. \end{aligned} \tag{10}$$

Establish the membership matrix by using the following formula:

$$P = \begin{bmatrix} p_{11} & p_{12} & \cdots & p_{1m} \\ p_{21} & p_{22} & \cdots & p_{2m} \\ \cdots & \cdots & \cdots & \cdots \\ p_{n1} & p_{n2} & \cdots & p_{nm} \end{bmatrix}. \tag{11}$$

Different membership matrices are obtained for the levels of asset impact, threat frequency, and vulnerability severity of different factors of the regulatory effect of the optimization path of the smart elderly care industry, which are expressed as P_c, P_t, and P_f, respectively, and the weight vector corresponding to each factor is expressed by the following formula:

$$D = (d_1, d_2, \cdots, d_n). \tag{12}$$

In the process of calculating the asset impact of the optimization path of the smart elderly care industry, give corresponding weights to each index in the evaluation set to obtain the corresponding index weight vector:

$$U = \left(u_1, u_2, \cdots, u_{n_1}\right), \tag{13}$$

where n_1 represents the number of elements in the evaluation set of system asset impact, and formula (14) is used to represent asset impact:

$$R_C = D \times P_c \times U^T. \tag{14}$$

Use formula (15) to represent the evaluation set index weight vector of system supervision frequency:

$$V = \left(v_1, v_2, \cdots, v_{n_2}\right), \tag{15}$$

where n_2 represents the number of elements in the evaluation set of supervision frequency, and formula (16) is used to represent the frequency of system supervision:

$$R_t = D \times P_t \times V^T. \tag{16}$$

Then, formula (17) is used to represent the evaluation set index weight vector of the severity of system vulnerability:

$$W = \left(w_1, w_2, \cdots, w_{n_3}\right), \tag{17}$$

where n_3 represents the number of elements in the evaluation set for the vulnerability severity of the optimization path of the smart elderly care industry, and formula (18) is used to calculate the vulnerability severity:

$$R_f = D \times P_f \times W^T. \tag{18}$$

3.2. Realization of Quantitative Evaluation of Regulatory Effect. In the process of quantitatively evaluating the regulatory effect of the optimal path of the smart pension industry, the regulatory probability of the system shall be determined on the basis of the weight vector of the indicators for evaluating the regulatory effect of the system obtained in Section 3.1, the relative value of the regulatory effect shall be obtained, and the maximum impact of the relative effect caused by the regulation shall be calculated, so as to complete the quantitative evaluation of the regulatory effect of the optimal path of the smart pension industry. The specific process is described as follows.

Based on the obtained weight vector of the regulatory effect evaluation set indicator, formula (19) is used to indicate the type of regulatory effect consequence attribute:

$$X = \left\{x_j | j = 1, 2, \cdots, m\right\}, \tag{19}$$

where x_j represents the result attribute, j represents the attribute of the threat consequence, m represents the number of categories of the result attribute, W is the weight to determine the risk result attribute of the optimization path of the intelligent elderly care industry, which is expressed by the following formula:

$$W\colon \left\{w_j | j = 1, 2, \cdots, m\right\}, \tag{20}$$

where w_j represents the weight of the mth consequence attribute.

After determining the regulatory effect consequence attribute of the optimized path of the smart pension industry, analyze the possibility of the occurrence of various types of regulation and the possible consequence value and determine the probability of the occurrence of regulation and the set of regulatory effect consequence attribute attributes, which can be, respectively, expressed by formulas (21) and (22):

$$P = \{p_i | i = 1, 2, \cdots, n\}, \tag{21}$$

$$V = \{v_{ij} | i = 1, 2, \cdots, n; j = 1, 2, \cdots, n\}, \tag{22}$$

where p_i represents the occurrence probability of the ith regulatory t_i in the regulatory set T and v_{ij} represents the possible influence value of the regulatory t_i on the consequence attribute x_j. Since the consequences of system supervision on the formation of the optimization path of the smart elderly care industry are multifaceted, in order to facilitate measurement, the quantitative stiffness of the consequence attributes of different supervision effects is eliminated, and the relative value of the consequences of system supervision effects is obtained by the following formula:

$$V^* = \{v_{ij}^* | i = 1, 2, \cdots, n; j = 1, 2, \cdots, m\}, \tag{23}$$

where v_{ij}^* is dimensionless, which represents the relative consequence impact value formed by the system supervision t_i in the consequence attribute x_j. On this basis, a quantitative evaluation model for the supervision effect of the optimization path of the intelligent elderly care industry is established by using the following formula:

$$v_{ij}^* = \frac{v_{ij}}{\max\{v_{kj}\}_{k=1}^{n}}, \tag{24}$$

where $\max\{v_{kj}\}_{k=1}^{n}$ represents the maximum value of the consequence impact caused by all system supervision threats in the consequence attribute x_j supervision set T.

4. Experimental Analysis

Experiments are designed to verify the reliability of intelligent pension industry optimization path based on multisource information intelligent fusion algorithm, and the experimental conclusions are drawn.

C language is used as the experimental language to construct the experimental environment of intelligent pension industry path optimization based on multisource intelligent information fusion algorithm. The Web is used as the main service device, and the SQL database is used as the experimental database. The key is placed in the server program, so that each host has four kernel processors and 16 GB of memory, and the connection between the hosts is achieved through the Gigabit Ethernet.

Using C language to optimize the path of intelligent pension industry research, design experiments to verify the reliability of the path, for which experimental parameters need to be designed, as shown in Table 1.

Table 1: Experimental parameter settings.

	Parameter
Management platform	Intel Xeon
Signal virtual transmitter	FPV 5.8 G 200 mW TS351
No. of virtual transmitters	8
Receiver host CPU	RC805 64 GB
Experimental language	C
Database technology	SQL
Data exchange	Full gigabit switch
Controller	5
Monitor	5

The experimental configuration includes 5 identical monitoring devices, and a signal management platform is installed on one of them. The platform includes the shared distribution control function and the signal tracking function. In the remaining 4 monitoring devices, the signal virtual transmitter and receiver are, respectively, configured, and a total of 8 virtual transmitters and receivers are used as download nodes, which together with the seed resources constitute the information resource distribution environment.

In order to prove the comprehensive effectiveness of the intelligent pension industry optimization path based on multisource information intelligent fusion algorithm, simulation experiments are needed. We use the method of this paper, the method in reference [7], and the method in reference [8] to evaluate and analyze 50 times the effect of intelligent pension industry optimization path regulation and describe the experimental results of the method of this paper, the method in reference [7], and the method in reference [8] by MATLAB mathematical software.

Using this method, the method in reference [7], and the method in reference [8], respectively, the experiment of quantitative evaluation on the effect of regulation on the optimal path of intelligent pension industry is carried out. Comparative map of different approaches to path vulnerability is shown in Figure 4.

From the analysis of Figure 4, we can see that the change curve of the vulnerability trend of the intelligent pension industry is consistent with the change curve of the actual vulnerability trend of the intelligent pension industry. This is mainly because the fuzzy theory divides the regulatory effect of the intelligent pension industry into different levels, calculates the level of regulatory effect of each level, obtains the weight vector of the regulatory effect evaluation index of each level, determines the probability of the occurrence of the system regulation, calculates the maximum impact of the regulatory effect, and thus completes the quantitative assessment of the regulatory effect of the intelligent pension industry, which makes the vulnerability of the optimal path of the intelligent pension industry more accurate.

Using this method, the method in reference [7], and the method in reference [8], respectively, the experiment of quantitative evaluation on the effect of smart pension industry optimization path regulation is carried out, and the

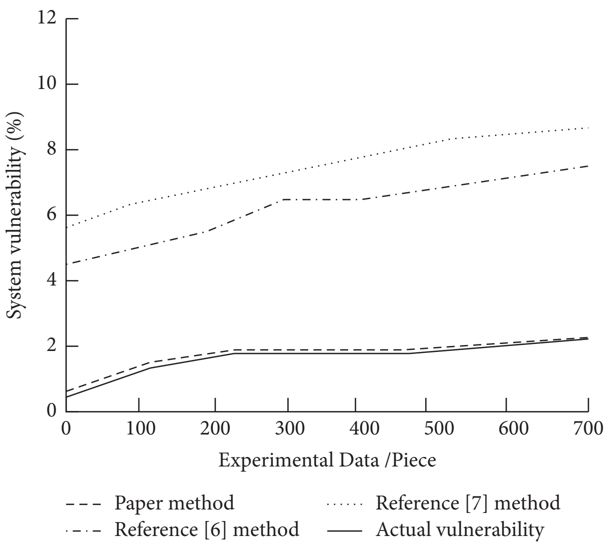

Figure 4: Comparative map of different approaches to path vulnerability.

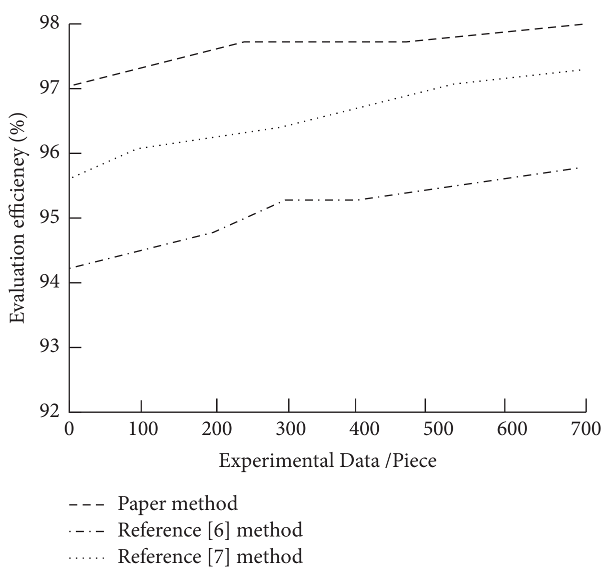

Figure 5: Comparison chart of efficiency of quantitative assessment of regulatory effectiveness by different methods.

efficiency of three methods is compared. The comparison results are shown in Figure 5.

As can be seen from Figure 5, the efficiency of the quantitative assessment of the regulatory effect of the optimal path of the smart pension industry is better than that of the method in reference [7] and the method in reference [8] because the method of this paper calculates the level of regulatory effect of each level, obtains the weight vector of the regulatory effect evaluation set index of each level, and determines the probability of the occurrence of the system regulation. We calculate the maximum impact of the relative effect caused by the regulation, which makes the quantitative assessment of the regulatory effect of the smart pension industry more efficient.

Using this method, the method in reference [7], and the method in reference [8], respectively, the experiment of

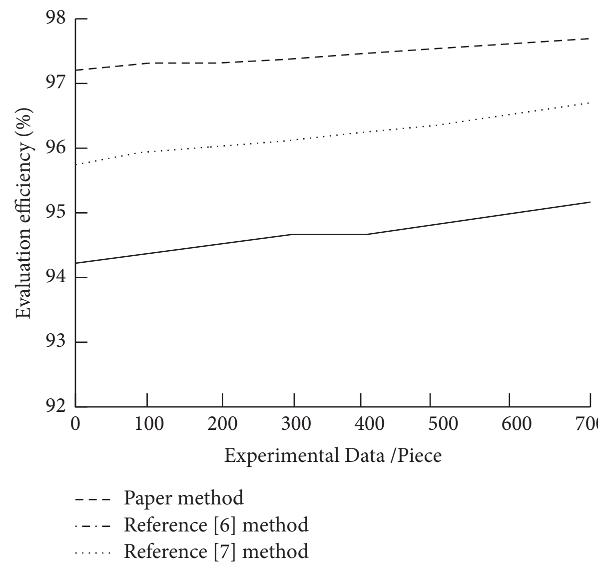

Figure 6: Reliability comparison chart for quantitative assessment of regulatory effectiveness by different methods.

quantitative evaluation on the effect of smart pension industry optimization path regulation is carried out, and the reliability of three methods is compared. The comparison results are shown in Figure 6.

Figure 6 shows that the reliability of the proposed method is better than that of the method in reference [7] and the method in reference [8] because the proposed method divides the effectiveness of the proposed method into three different levels: asset impact, threat frequency, and vulnerability severity, describes the level of the effectiveness of the system regulation from different levels, calculates the weight vector of the effectiveness of the system regulation at each level, determines the attribute type of the regulatory consequences at each level on this basis, calculates the maximum impact of the regulatory consequences at each level, and makes use of this value to complete the quantitative assessment of the effectiveness of the regulation of the intelligent pension industry, so that the reliability of the proposed method for the quantitative assessment of the effectiveness of the regulatory effects of the intelligent pension industry is better.

The same frequency interference refers to the overlapping part of signals taken by different monitors, whose field strength is the sum of the field strengths of signals from different monitors, and the time of signals sent out by different monitors is different from the time of signals sent out in theory because of the difference of signal transmission route, medium, and transmitting equipment. It is shown that there is delay difference between signals, and the relative phase difference of each signal is produced. Because of the existence of phase difference, the signals of each overlapping area in the optimal path of intelligent pension industry are disturbed by the same frequency, which directly affects the normal monitoring system. The intelligent pension industry optimization path using multisource intelligent fusion algorithm will not be subject to the same frequency interference, and the control effect of the intelligent pension

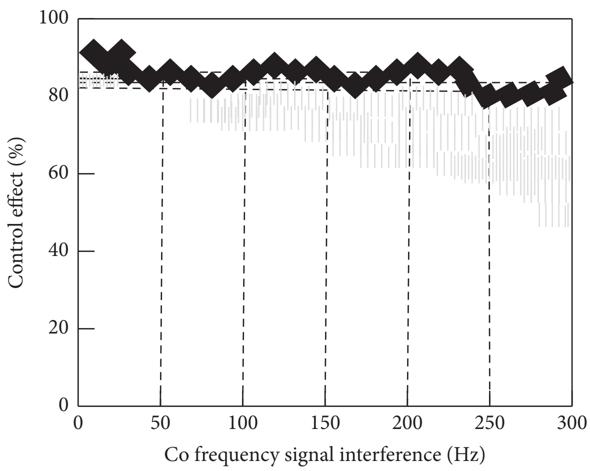

Figure 7: Effect of intelligent pension industry path control under same frequency interference.

industry optimization path under the same frequency interference is shown in Figure 7.

From Figure 7, it can be seen that the initial control effect of the intelligent pension industry is greater than or equal to 80% under the same frequency interference. The control effect is 83% when the strength of the interference signal of the same frequency is 50 Hz; 82% when the strength of the interference signal of the same frequency is 100 Hz; 81% when the strength of the interference signal of the same frequency is 150 Hz; 90% when the strength of the interference signal of the same frequency is 200 Hz; 80% when the strength of the interference signal of the same frequency is 250 Hz; and 82% when the strength of the interference signal of the same frequency is 300 Hz. The results show that, under the same frequency interference, the optimal path control effect of intelligent pension industry fluctuates little and has a certain stability.

5. Discussion

As a vital part of the social security system, the smart pension industry plays a key role in promoting the harmonious and stable development of society. However, the diversified development of the current economic model requires adjustment and optimization of the current path of the smart elderly care industry. In order to better implement the smart pension system and make it develop in a healthy way, some suggestions for improving and optimizing my country's pension system from the following aspects are put forward:

(1) Enhancing the sustainability of the smart pension industry: for the purpose of improving the efficiency of fund operation in combination with the market competition mechanism, the development of financial market norms and environment should be strengthened. In addition, efforts should be made to strengthen the liquidity and security of pension funds and avoid excessive losses caused by some radical operations, so as to ensure the sustainable development of the intelligent pension industry.

(2) Strengthening the construction of the optimization path for the smart elderly care industry in rural areas: the scale of the domestic rural population is huge, but the construction of the optimization path for the elderly care of this group is lagging behind. In order to improve the basic quality of life and basic security for the rural aging population, it is urgent to improve and implement the optimal path of smart pension industry in rural areas.

(3) Strengthening the transparency of relevant systems and policies and preventing misunderstanding by the masses: China's smart pension industry has a very close relationship with the broad masses of people, so we must do a good job in institutional reform and innovation, do a good job in comprehensive publicity, give authoritative explanations with strong credibility, and eliminate the information that distorts facts in the transmission process of the optimization path of the smart pension industry.

(4) Perfecting the financing mode and carrying out multichannel investment: there are not many financing modes for the current intelligent elderly care industry, and the investment channels should be expanded to better realize the function of financial revenue allocation.

6. Conclusion

The optimal path of intelligent pension industry based on multisource information intelligent fusion algorithm can better quantify the regulatory effect of intelligent pension industry and effectively improve the quantitative evaluation accuracy of the regulatory effect of intelligent pension industry. Under the same frequency interference, the control effect of intelligent pension industry's optimal path has little fluctuation and certain stability. There are some limitations in the study, such as the lack of careful classification of empty-nest elderly in rural areas, the failure to consider the differences of different individuals, and the different needs of empty-nest elderly. These issues need to be discussed in the follow-up study.

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.

Acknowledgments

This study was supported by the Social Science Foundation of Heilongjiang (grant no. 20JYH064).

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