Research Article

Research on the Evaluation of Industrial Poverty Alleviation under the Background of the Internet

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With the advent of the information age in the 21st century, Internet technology has developed rapidly. With the development of agriculture, industry, and service industry, Internet technology has also achieved further innovation and cross-border integration. The rapid development of Internet technology has provided new ideas for poverty alleviation in poor areas of China and accelerated the speed of poverty alleviation in poor areas. Based on the assumption of China’s industrial poverty alleviation and the analysis of the implementation center, this paper puts forward an evaluation method of industrial poverty alleviation effect based on the fuzzy comprehensive evaluation method, which is evaluated from three aspects: income structure, expenditure structure, and labor resources. Taking Wuxi County as an example, this paper discusses the combination of human capital theory and multidimensional poverty theory. The evaluation of poverty alleviation effectiveness includes four indicators (comprehensive analysis, evaluation system, policy implementation, poverty alleviation funds) and 21 secondary indicators. Fuzzy comprehensive evaluation is an objective, fair, and comprehensive evaluation of the overall level of poverty alleviation and development in Wuxi. The expert scoring method is used to calculate the weight of each index and determine the level of members and the industrial situation of China’s industrial poverty alleviation. According to the scores of each evaluation index, the poor households in Wuxi County are very satisfied with the person in charge of help, the villager group, the way of helping, and the effect of helping.

1. Introduction

In 2006, the State Council issued the Guiding Opinions on Promoting the Action Plan of “Internet plus.” It is pointed out that it is necessary to conform to the development trend of “Internet plus” in the world and create new advantages and new impetus for social and economic development. Under the background of the Internet in the Internet plus, poverty needs to seize the opportunity of the Internet. Through the “high-speed train” of information technology, we can realize the high connection between resources in poverty-stricken areas and external markets [1, 2]. In the era of Internet plus, we should gradually explore new poverty alleviation strategies for economic and social development in poverty-stricken areas and innovate poverty alleviation concepts, policies, and methods [3].

At present, the research direction of poverty alleviation effect evaluation system in China is mostly in the field of poverty degree evaluation and poverty identification, which is too inclined to economic development and ignores the sustainable development of human society and ecological environment. Government departments pay too much attention to the investment of poverty alleviation funds and the formulation of poverty alleviation policies and have less evaluation on the effect of industrial poverty alleviation [4]. How to evaluate the effect of industrial poverty alleviation in poverty-stricken areas and sum up experiences and lessons can not only provide reference and guidance for the current evaluation of poverty alleviation effect but also put forward suggestions for the further development of poverty alleviation in the future [5]. This is the practical significance of this study.
On the basis of defining relevant concepts, this paper analyzes the present situation and characteristics of industrial poverty alleviation in Wuxi County and evaluates the effect of industrial poverty alleviation in Wuxi County by using fuzzy comprehensive evaluation method [6, 7]. At present, fuzzy comprehensive analysis method is mainly used to explore and analyze the risks of several projects. The theoretical significance of this paper lies in applying the creative fuzzy comprehensive evaluation method to the evaluation of industrial poverty alleviation effect, which opens up a new perspective for the theoretical system of poverty alleviation effect evaluation [8].

In this paper, the fuzzy evaluation model is used to evaluate and apply the industrial structure, which provides a theoretical basis for the design of the evaluation system of industrial poverty alleviation. Through fuzzy evaluation method, the evaluation system of industrial poverty alleviation effect is designed. By designing scientific and reasonable evaluation indexes, the evaluation index system of industrial poverty alleviation effect is established, including a comprehensive evaluation system of 4 first-class indexes and 21 second-class indexes so as to make an objective and fair evaluation of the industrial poverty alleviation effect in poverty-stricken areas.

2. Definition and Theoretical Basis of Related Concepts of Industrial Poverty Alleviation

2.1. Definition of Related Concepts

2.1.1. Industrial Poverty Alleviation. Industrial poverty alleviation refers to the process of poverty alleviation and development with market as the guide, economic benefits as the center, and industrial development as the lever. It is an effective way to promote the development of poor areas and increase the income of poor farmers [9]. It is the strategic focus and main task of poverty alleviation and development. Industrial poverty alleviation is an endogenous development mechanism, which aims to promote the coordinated development of poor individuals and poor areas, take root in development genes, activate development momentum, and cut off poverty momentum.

2.1.2. Fuzzy Comprehensive Evaluation. Fuzzy comprehensive evaluation method is a comprehensive analysis and evaluation method based on reasoning, quantitative and qualitative, correct, and fuzzy combination. A system analysis method is suitable for “fuzzy” evaluation of things. Membership theory in fuzzy mathematics is its basic principle. When analyzing some complex system problems, the fuzzy comprehensive evaluation method has incomparable advantages over other correct analysis methods. Therefore, in recent years, it has become the preferred tool to deal with complex problems and has been widely used in many research fields [10]. The fuzzy decision model generally requires the following steps: (1) establish the factor set of comprehensive evaluation, (2) establish the evaluation set of comprehensive evaluation, (3) carry out single-factor fuzzy evaluation to obtain an evaluation matrix, (4) determine a factor weight vector, (5) establish a comprehensive evaluation model, and (6) determine the total system score.

2.2. Theoretical Basis

2.2.1. Human Capital Theory. Different from other material capital, human capital is immaterial intangible capital, which refers to the skills, experience, knowledge, and other qualities attached to workers. Education investment such as continuing education, training, and social practice is its main investment form [11]. For the invested individuals, human investment can achieve the synchronization of personal development and income growth. The same amount of labor can bring additional benefits and accelerate economic development.

2.2.2. Multidimensional Poverty Theory. The multidimensional poverty theory was put forward by Indian economist and Nobel Prize winner Amartya Fair in 1984. The main point is that human poverty includes not only income poverty but also subjective perception of welfare through objective indicators such as drinking water and roads [12].

3. Evaluation Method of Industrial Poverty Alleviation Effectiveness Based on Fuzzy Evaluation

3.1. Fuzzy Evaluation Steps

Step 1. The judgment matrix determines the weight of each index.

Analytic hierarchy process (AHP) mainly determines the weights of indicators at all levels including target level, standard level, and scene level. Its main idea is to establish a judgment matrix to determine the importance of each element. According to the judgment of the expert group, the two factors are compared and evaluated according to the importance of each factor [13, 14]. The index $C$ is chosen as the evaluation criterion, and the importance degree of elements $U_1, U_2, U_3, \ldots, U_n$ relative to element $C$ is the next index controlled by it, that is, the weight. The scale of 1 ~ 9 is used to quantify the importance of elements $U_i$ and $U_j$ to criterion $C$ as shown in Table 1.

Step 2. Consistency test.

When calculating the weight, consistency test must also be carried out. The inspection method and process are given in Table 2.

Step A: calculate the consistency index (CI):

$$CI = \frac{\lambda_{\text{max}} - n}{n - 1}. \quad (1)$$

Because the CI value changes with the change of the deterministic matrix, it is necessary to introduce RI as the matrix matching index to verify the matching of different next deterministic matrices.
Table 1: Importance scale of evaluation factors.

| Important scale $a_{ij}$ | Meaning                                    |
|---------------------------|--------------------------------------------|
| 1                         | $i$ and $j$ are equally important          |
| 3                         | $i$ is slightly more important than $j$    |
| 5                         | $i$ is obviously more important than $j$   |
| 7                         | $i$ is more important than $j$             |
| 9                         | $i$ is more important than $j$             |
| 1, 2, 6, 8                | Corresponding intermediate scale           |

The reciprocal of the above values

If the importance ratio of element $i$ to $j$ is $a_{ij}$, then the importance ratio of element $j$ to element $i$ is $a_{ji} = 1/a_{ij}$.

| Table 2: Random index RI. |
|---------------------------|
| Matrix order   | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    |
| RI            | 0    | 0.58 | 0.90 | 1.12 | 1.24 | 1.32 | 1.41 | 1.45 |

Step 6. Synthesize the result vector of fuzzy comprehensive evaluation.

3.2. Construction of the Evaluation Index System for Industrial Poverty Alleviation

3.2.1. Principles of Indicator Selection. The establishment of industrial poverty alleviation effect evaluation index is an important part of industrial poverty alleviation effect evaluation in Wuxi County [10, 15]. Therefore, when constructing the evaluation system, we must follow the following index selection principles: good faith principle, scientific principle, focusing principle, and usability principle.

3.2.2. Construction of the Evaluation Index System. Index system of industrial poverty alleviation effectiveness evaluation is shown in Table 3.

3.3. Determination of Weight of the Index System

3.3.1. Determination of the Weight of the First-Class Index

3.3.2. Determination of the Weight of Secondary Indicators.

Step 3. Establish the evaluation set of fuzzy comprehensive evaluation.

The evaluation index in AHP is based on hierarchical structure, and comprehensive evaluation is carried out on this basis, so the evaluation index in AHP can be used directly. In the fuzzy comprehensive evaluation method, the grades of comments are called fuzzy grades, such as good, good, fair, and bad, which constitute the comment set $V = \{V_1, V_2, \ldots, V_3\}$.

Step 4. Establish membership matrix $R$.

According to the expert judgment, the membership degree of each element of the index set to each comment is obtained, and the membership matrix is constructed.

Step 5. Calculate the fuzzy comprehensive evaluation vector.

The fuzzy evaluation vector $B_i$ of each evaluation index can be calculated by using the calculation model $B_i = W_i \ast R_i$ of fuzzy comprehensive evaluation.
The weight calculation and consistency test of B2 index of policy implementation are shown in Table 8.
The weight calculation and consistency test of B3 index for the promotion of poor villages are shown in Table 9.
The weight calculation and consistency test of B4 index of industrial poverty alleviation satisfaction are shown in Table 10.

Through calculation, the matching check of all decision matrices is less than 0.1, that is, CR < 0.1, which shows that
the selected weight value is expected and effective, and the satisfaction degree of the matrices constructed in this paper is consistent.
3.3.3. Determination of Comprehensive Weight and Ranking Statistics of Each Index. Weight comprehensive ranking is shown in Table 11.

3.3.4. Indicator Weight Description. It can be seen from the data in the table that the weight of improving living standards is 0.1168, the weight of policy implementation is 0.5732, the weight of poor villages is 0.2291, and the weight of industrial poverty alleviation satisfaction is 0.0809. The evaluation results show that among the evaluation indicators affecting the effect of industrial poverty alleviation, policy implementation has the highest proportion and is also the most important indicator. Therefore, the implementation of poverty alleviation policy is an important factor to promote poverty alleviation in rural poor areas and poor people. The implementation of this policy is directly related to the improvement of production and life of poor families, and experts have paid more attention to it. Second, the improvement of poor villages is mainly because the infrastructure conditions of poor villages are still an important bottleneck affecting poverty alleviation in poor areas. By vigorously building infrastructure, the development environment and conditions in poverty-stricken areas can be greatly improved, which is an

| $B_4$ | $C_{18}$ | $C_{19}$ | $C_{20}$ | $C_{21}$ | Weight | RI |
|-------|----------|----------|----------|----------|--------|----|
| $C_{18}$ | 1/3 | 1/2 | 1/5 | 0.0858 | 0.9 |
| $C_{19}$ | 3 | 1 | 3 | 0.2887 | CI |
| $C_{20}$ | 2 | 1/3 | 1 | 0.1296 | 0.019 |
| $C_{21}$ | 5 | 2 | 4 | 0.4959 | CR = 0.0211 |

If $CR = 0.0211 < 0.1$, it passes the consistency test.

| A | $B$ criterion layer index | $C$ Scheme layer indicators | Index weight | Composite weight | Sort |
|---|--------------------------|----------------------------|-------------|----------------|------|
| $B_1$ improvement of living standards | $C_1$ source of income | 0.1611 | 0.0188 | 16 |
| | $C_2$ expenditure structure | 0.0806 | 0.0094 | 20 |
| | $C_3$ food and clothing guarantee rate | 0.3792 | 0.0443 | 7 |
| | $C_4$ housing security rate | 0.3792 | 0.0443 | 7 |
| | $C_5$ ex situ poverty alleviation and relocation | 0.1883 | 0.1079 | 2 |
| | $C_6$ industry helps the poor | 0.0598 | 0.0343 | 10 |
| | $C_7$ renovation of dilapidated buildings | 0.1362 | 0.0781 | 5 |
| $B_2$ policy implementation | $C_8$ ecological poverty alleviation | 0.0598 | 0.0343 | 10 |
| | $C_9$ education for poverty alleviation | 0.0598 | 0.0343 | 10 |
| | $C_{10}$ medical assistance | 0.3406 | 0.1952 | 1 |
| | $C_{11}$ workforce skills training | 0.1555 | 0.0891 | 3 |
| | $C_{12}$ rural drinking water safety rate | 0.3425 | 0.0785 | 4 |
| | $C_{13}$ hardening rate of rural roads | 0.1365 | 0.0313 | 13 |
| | $C_{14}$ village collective economy | 0.1365 | 0.0313 | 13 |
| | $C_{15}$ health and medical facilities | 0.0726 | 0.0166 | 17 |
| | $C_{16}$ cultural and sports facilities | 0.0417 | 0.0096 | 19 |
| | $C_{17}$ kindergarten and primary school | 0.2702 | 0.0619 | 6 |
| | $C_{18}$ satisfaction with helping those responsible | 0.0858 | 0.0069 | 21 |
| | $C_{19}$ satisfaction with help methods | 0.2887 | 0.0234 | 15 |
| | $C_{20}$ satisfaction with the resident team | 0.1296 | 0.0105 | 18 |
| | $C_{21}$ satisfaction with the effectiveness of assistance work | 0.4959 | 0.0401 | 9 |
important indicator to measure the effect of poverty alleviation. Third, improve living standards. Only by implementing poverty alleviation policies and improving the infrastructure of poor villages can people's living standards be improved. Therefore, compared with the first two indicators, the given weight is lower. Finally, the poverty alleviation through business development satisfaction is evaluated. After the implementation of poverty alleviation policy, the living conditions of poor villages and poor households have improved. If income increases, many poor families are very satisfied, so experts give the lowest weight.

Through the analysis of standard level indicators, among the indicators for improving living standards, the weight of income source is 0.161, the weight of expenditure structure is 0.0806, the weight of food and clothing security rate is 0.3792, and the weight of housing security rate is 0.3792, which is consistent with clothing weight and food safety rate and higher than the other two indicators. This is because the safety of food, clothing, and housing is the foundation of human survival. It is the material basis to ensure the sustainable development of mankind. In the process of policy implementation, the proportion of poverty alleviation transfer subsidy is 0.188, and the proportion of industrial poverty alleviation, ecological poverty alleviation, and education poverty alleviation is 0.0598. The importance of various poverty alleviation policies is the same. The two complement each other. The weight of reconstruction of dilapidated buildings is 0.162, the weight of medical assistance is 0.3406, and the weight of labor skills training is 0.1555, among which medical assistance has the highest weight, indicating that a healthy body is the capital and foundation of all human activities. In the process of promoting poor villages, the weight of rural drinking water safety rate is 0.3425, the weight of rural road hardening rate is 0.165, the weight of rural collective economy is 0.165, the weight of health and medical facilities is 0.0726, the weight of sports facilities is 0.0417, and the ratio of kindergarten to primary school is 0.272. The weight of satisfaction with village groups is 0.11296, and the weight of satisfaction with aid effectiveness is 0.4959. Among them, satisfaction accounts for the highest proportion in the effect of poverty alleviation activities. The effect of poverty alleviation activities is the final index to test poverty alleviation activities, so we should focus on poverty alleviation.

After determining the comprehensive weight of each index, the first six indexes have the greatest influence on medical assistance, and the other five indexes are sorted according to the comprehensive weight: poverty alleviation transfer in different places, labor skills training, rural drinking water safety rate, reconstruction of old houses, and kindergartens and primary schools. The other 15 index factors are arranged according to comprehensive weight: residents' safety rate, food safety rate, clothing safety rate, satisfaction with assistance effect, industrial poverty alleviation, ecological poverty alleviation, education poverty alleviation, rural road hardening rate, village collective economy, rescue mode, income source, health and medical facilities, village team, sports facilities, and expenditure structure. To a certain extent, the comprehensive weight ranking of these indicators reflects experts' concern about the effect of industrial poverty alleviation.

4. Comprehensive Evaluation of Industrial Poverty Alleviation in Wuxi County, Chongqing

4.1. Introduction of Wuxi County. Wuxi County is one of the key poverty alleviation counties in Chongqing, located in the northeast of Chongqing, at the southern foot of the eastern bus section. This is a typical mountainous agricultural county. Wuxi County is located at the junction of Chongqing, Shaanxi, and Hubei provinces, bordering Shennongjia Forest Region and Zhuxi County in Hubei Province in the east, Fengjie County and Wushan County in the south, Kaizhou District and Yunyang County in the west, and Chengkou County and Zhenping County in Shaanxi Province in the north. As of 2017, the total area of Wuxi County has reached 4,030 square kilometers. According to the data of the seventh census, as of November 1, 2020, the resident population of Wuxi County was 388,600 with 810,000 mu of cultivated land. In addition, due to the uneven distribution of rainfall in time and space, the rainstorm is concentrated and the convergence speed is fast, which forms a very serious water shortage problem in this project. In particular, predatory reclamation has seriously damaged the ecological environment of the whole county. The area of soil erosion is 2537 square kilometers, accounting for 63% of the total area of the county, and the living environment is further deteriorated. Once upon a time, the poverty rate here reached 18%, ranking first in Chongqing. By the end of 2020, all 150 poverty-stricken villages in Wuxi County have been lifted out of poverty, with a decrease of 105,000 people and a decrease of 0.65% in the incidence of poverty, and they have successfully withdrawn from the national key poverty alleviation and development counties. The result is shown in Figure 1.

4.2. Expert Score to Determine the Membership Matrix of Evaluation Index. Firstly, the comment set is established as $V = \{ V_1, V_2, \ldots, V_n \}$, where $V_j \ (j = 1, 2, \ldots, n)$. The comments of industrial poverty alleviation indicators in Wuxi County are set as “very good,” “good,” “medium,” “poor,” and “difference.” Then, the comments represented in the order of $n = 5$ and $V_1–V_5$ are “very good,” “good,” “medium,” “poor,” and “difference.” In this manual, the annotation set can be regarded as vector C and assigned values. The added value of the annotation set is shown in Figure 2.

Next, it needs to decide the membership degree, and the membership degree value of each annotation is the proportion of the number of experts who selected the annotation. Table 12 shows the membership degree determined by expert score.

According to the expert evaluation, the membership degree of each element of the index set to each comment is obtained, and the membership matrix is constructed. The results are as follows:
4.3. Determining the Fuzzy Evaluation Vector. The fuzzy evaluation vector $B_i$ of each evaluation index can be calculated by using the calculation model $B_i = W_i \ast R_i$ of fuzzy comprehensive evaluation method.

$$B_i = W_i \ast R_i,$$
$$W = (0.1168, 0.5732, 0.2291, 0.0809),$$
$$W_1 = (0.0188, 0.0094, 0.0443, 0.0443),$$
$$W_2 = (0.1079, 0.0343, 0.0781, 0.0343, 0.0343, 0.1952, 0.0891),$$
$$W_3 = (0.0785, 0.0313, 0.0313, 0.0166, 0.0096, 0.0619),$$
$$W_4 = (0.0069, 0.0234, 0.0105, 0.0401),$$

$$B_1 = (0.0188, 0.0094, 0.0443, 0.0443) \ast \begin{pmatrix}
0.2 & 0.4 & 0.3 & 0.1 & 0 \\
0.1 & 0.2 & 0.4 & 0.2 & 0.1 \\
0.7 & 0.3 & 0.0 & 0.0 & 0 \\
0.6 & 0.3 & 0.1 & 0.0 & 0 
\end{pmatrix}.$$

Get

$$B_1 = (0.06229, 0.03598, 0.01383, 0.00376, 0.00094).$$  \hspace{1cm} (6)

Calculate $B_2$, $B_3$, and $B_4$ in the same way.

Comprehensive synthesis of fuzzy evaluation vectors:

$$B = W \ast R = (B_1, B_2, B_2, B_4),$$

$R$ is the data in Table 13, resulting in

$$B = (0.08692, 0.14786, 0.13298, 0.02472, 0.00877).$$  \hspace{1cm} (7)
Table 12: Expert scoring table.

| Indicators                                   | Very good | Better | Medium | Poor  | Difference |
|----------------------------------------------|-----------|--------|--------|-------|------------|
| Source of income                             | 0.2       | 0.4    | 0.3    | 0.1   | 0          |
| Expenditure structure                        | 0.1       | 0.2    | 0.4    | 0.2   | 0.1        |
| Food and clothing guarantee rate             | 0.7       | 0.3    | 0      | 0     | 0          |
| Housing security rate                        | 0.6       | 0.3    | 0.1    | 0     | 0          |
| Ex situ poverty alleviation and relocation   | 0.1       | 0.5    | 0.4    | 0     | 0          |
| Industrial poverty alleviation               | 0.2       | 0.3    | 0.4    | 0     | 0.1        |
| Renovation of dilapidated buildings          | 0.3       | 0.4    | 0.3    | 0     | 0          |
| Ecological poverty alleviation               | 0.2       | 0.3    | 0.3    | 0.2   | 0          |
| Poverty alleviation through education         | 0.3       | 0.5    | 0.2    | 0     | 0          |
| Medical assistance                           | 0.3       | 0.4    | 0.3    | 0     | 0          |
| Labor skill training                         | 0.1       | 0.2    | 0.4    | 0.2   | 0.1        |
| Rural drinking water safety rate             | 0.1       | 0.4    | 0.4    | 0.1   | 0          |
| Hardening rate of rural roads                | 0.2       | 0.3    | 0.4    | 0.1   | 0          |
| Village economy                              | 0.1       | 0.2    | 0.5    | 0.1   | 0.1        |
| Health and medical facilities                | 0.3       | 0.5    | 0.2    | 0     | 0          |
| Cultural and sports facilities               | 0.2       | 0.3    | 0.3    | 0.2   | 0          |
| Kindergarten and primary school              | 0         | 0.2    | 0.3    | 0.3   | 0.2        |
| Satisfaction with helping those responsible  | 0.3       | 0.3    | 0.3    | 0.1   | 0          |
| Satisfaction with the way of helping         | 0.4       | 0.3    | 0.2    | 0.1   | 0          |
| Satisfaction with the resident team          | 0.2       | 0.4    | 0.4    | 0     | 0          |
| Satisfaction with the effectiveness of assistance work | 0.3       | 0.3    | 0.4    | 0     | 0          |

Table 13: Calculation table of the fuzzy evaluation vector.

| B1   | 0.06229 | 0.03598 | 0.01383 | 0.00373 | 0.00094 |
| B2   | 0.1257  | 0.21882 | 0.19166 | 0.02811 | 0.00891 |
| B3   | 0.02414 | 0.07061 | 0.08434 | 0.0346  | 0.01551 |
| B4   | 0.02556 | 0.02532 | 0.02699 | 0.00303 | 0 |

Figure 3: Proportion of experts’ evaluation of industrial poverty alleviation in Wuxi County.

Normalizing B results in

\[ B = (0.21663, 0.36849, 0.33141, 0.06160, 0.02186). \]  

According to the results of fuzzy evaluation vector, the membership degree belonging to the “better” level is the largest, which is 0.36849; that is, nearly 36.8% of experts think that the industrial poverty alleviation effect in Wuxi County is at a good level. According to the principle of maximum subordination, the effect of industrial poverty alleviation is at a “good” level. In addition, 21.7% of the experts answered “good,” 33.1% thought it was “medium,” and 61.1% answered “poor.” Only 2.2% of experts thought it was “bad,” as shown in Figure 3.

4.4. Comprehensive Score of Industrial Poverty Alleviation Effectiveness. The above research results only qualitatively evaluate the effect of industrial poverty alleviation in Wuxi County, and the evaluation results are generally vague. Therefore, the quantification score is used to quantify the evaluation result. Five levels of performance evaluation (very good, good, medium, poor, and difference). Multiply the evaluation ratio by the index dependence matrix to obtain the single factor score:

\[ C_1 = (0.2, 0.4, 0.3, 0.1, 0)^T (1, 0.8, 0.6, 0.4, 0.2)^T = 0.74, \]
\[ C_2 = 0.1, 0.2, 0.4, 0.2, 0.1^T (1, 0.8, 0.6, 0.4, 0.2)^T = 0.6, \]
\[ C_3 = (0.7, 0.3, 0.1, 0, 0) * (1, 0.8, 0.6, 0.4, 0.2)^T = 0.94, \]
\[ C_4 = (0.6, 0.3, 0.1, 0, 0) * (1, 0.8, 0.6, 0.4, 0.2)^T = 0.9. \]
The score of criterion level index can be calculated by multiplying the weight of scheme level index by the score of each index (taking the improvement of living standard as an example).

\[
B1 = (0.1611, 0.0806, 0.3792, 0.3792)^\top
\begin{bmatrix}
0.74 \\
0.6 \\
0.94 \\
0.90
\end{bmatrix}
\begin{bmatrix}
0.74 \\
0.6 \\
0.74 \\
0.72 \\
0.8 \\
0.7 \\
0.82 \\
0.8 \\
0.6 \\
0.7 \\
0.82 \\
0.7 \\
0.8 \\
0.62 \\
0.5 \\
0.6 \\
0.76 \\
0.8 \\
0.76 \\
0.78
\end{bmatrix}
= 0.87.
\]

(10)

The score of the target layer is the weight of the index of the criterion layer multiplied by the score of each index, as shown in Figure 4.

4.5. Evaluation Results and Problem Analysis. It can be seen from Table 14 that the final comprehensive score of industrial poverty alleviation effect in Wuxi County is 0.74, and the industrial poverty alleviation effect in Wuxi County is at a "good" level, in which the living standard is improved by 0.87, the policy implementation is 0.75, 0.65 is used to improve poor villages, and 0.78 is used to meet industrial poverty assistance.

In terms of improving living standards, the score of income source is 0.74; the score of expenditure structure is 0.60; the score of food, clothing, housing, and transportation security rate is 0.94; and the score of housing security rate is 0.90. According to the scores of various evaluation indicators, the living standards of poor households have improved significantly since Wuxi County launched industrial poverty alleviation activities. The income sources are not only crop planting but also characteristic aquaculture, five-in-one financial poverty alleviation, coordinated dividends, and solar power generation industry, which greatly increased the income of poor families. The main reason for the low score of expenditure structure is the large expenditure on medical and health care. More than 50% of poor families in Wuxi County are poor due to illness. Medical expenses account for half of the total income, daily expenses account for 33%, and operating expenses account for 8%. The expenditure structure is unreasonable. Food and clothing security rate and housing security rate reached a good level. Poor households in Wuxi County basically have no worries about food and clothing, and their housing is basically guaranteed.

Under the policy implementation, the scores of relocation, poverty alleviation, and transfer are 0.74, 0.72, 0.80, 0.70, 0.82, 0.80, and 0.60 respectively. Judging from the scores of various evaluation indicators, Wuxi County has done a good job in relocation and poverty alleviation so that farmers’ income will continue to increase. In the renovation of dilapidated buildings, the renovation has been completed by means of new construction, replacement, and repair, but there are some poor families giving up the renovation. The government should pay special attention to finding out the reasons. In terms of ecologcal poverty alleviation, since 2008, the coal industry has continuously integrated resources and closed small and medium-sized coal mining enterprises with high-ash, high-sulfur, high-gas, low-heat, and great potential safety hazards. The government vigorously protects the environment and strengthens the management of atmospheric environment. At the same time, by 2025, the forest coverage rate will reach over 25%, the urban sewage treatment rate will reach 100%, the degree of soil and water conservation management will reach 63.07%, and the energy consumption per 10,000 yuan of GDP will be reduced by 17%. Urban and rural areas will become more livable. Poor family members with labor force are employed as forest rangers. Wuxi County is better in poverty alleviation education. The enrollment rate of school-age children reached 100%. Subsidies to students in the nine-year compulsory education stage are given, subsidies of 5,000 yuan to students in more than two courses are given, and subsidies of 2,000 yuan to technical school students every year are given. The farmers are very satisfied. In terms of medical assistance, medical conditions are insufficient. Poor people are further
impoverished by illness and disability. The number of poor people due to illness in Wuxi County accounts for half of the card-building households. By providing medical assistance, the government has greatly improved the medical environment in poor areas, and medical assistance must continue to improve.

In the improvement of poor villages, the rural drinking water safety rate is 0.70, the rural road hardening rate is 0.72, the village collective economy score is 0.62, the health and medical facilities score is 0.82, the sports facilities score is 0.70, and the kindergartens and primary schools score is 0.50. Judging from the scores of each evaluation index, in terms of infrastructure construction, since poverty alleviation activities were carried out, the appearance of villages has been greatly improved, and waterways have been basically improved. However, due to the imperfect infrastructure, hardened roads, and damaged village committees and roads in some remote villages, the government must continue to improve. The collective economy of the village began to move towards zero in just two years, but it is still immature and the funds are not in place in time. In some rural areas with poor natural conditions, there is no collective economic dividend income at present, and the score of basic education is the lowest. At present, the number of kindergartens and primary schools in Wuxi County is small, so we should increase investment in basic education. Judging from the scores of each evaluation index, poor households in Wuxi County are very satisfied with the person in charge of helping, villagers’ groups, helping methods, and helping effects.

5. Conclusion

In order to study the concrete effect of industrial poverty alleviation, this paper puts forward an evaluation method of industrial poverty alleviation based on fuzzy evaluation method. First of all, collect relevant literature at home and abroad, collate relevant data, summarize the previous research results of scholars at home and abroad, briefly introduce the concept of industrial poverty alleviation, and summarize the previous experience of industrial poverty alleviation, which provides a certain theoretical basis for the design of industrial poverty alleviation evaluation system in this study. Secondly, based on the present situation of industrial poverty alleviation in Wuxi County, this paper analyzes the natural and economic conditions of Wuxi County and obtains the present situation of extensive poverty and serious poverty in Wuxi County. By analyzing the causes of poverty in Wuxi County, we can see that natural factors, government financial supply capacity, infrastructure construction, and poverty level are the main causes of poverty in Wuxi County. At the same time, through the analysis of the effect of industrial poverty alleviation in Wuxi County, we can understand the development process and achievements of industrial poverty alleviation in Wuxi County and introduce the industrial poverty alleviation model and experience in Wuxi County in detail.

Based on fuzzy evaluation method, the evaluation system of industrial poverty alleviation effect in Wuxi County is designed. By designing scientific and reasonable evaluation indexes, the evaluation index system of industrial poverty alleviation effect in Wuxi County is established, including a comprehensive evaluation system of 4 first-class indexes and 21 second-class indexes. Through fuzzy evaluation method, this paper analyzes the weight of each index in detail, obtains the specific status of industrial poverty alleviation effect in Wuxi County, and makes an objective and fair evaluation of industrial poverty alleviation effect in poverty-stricken areas of Wuxi County.

Data Availability

The experimental 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 regarding this work.

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