**3.** **Methods**

**3.1. Construction of performance evaluation index of government managers**

The establishment of evaluation index system is the basic condition to complete the performance evaluation of government managers.Constructing a scientific and effective evaluation index system needs the process of index primary selection, perfection to final use and so on[24,25]. The design of evaluation index system should follow the basic principles of "purpose, science, applicability, maneuverability, guidance and credibility". According to the current evaluation criteria of cadres in our country, that is, "ability, moral character, diligence, performance" standard, and combines with the actual work requirements of government administrators, this paper selects the following performance appraisal evaluation index system, including "Ability," Moral character, Performance, Diligence" four first-degree indicators"[26,27]. The specific meaning of the whole performance evaluation index system and its various indicator systems is shown in Table 1.

**Table 1 Performance evaluation indicators for government managers**

|  |  |  |
| --- | --- | --- |
|  | Primary indicator | Secondary index |
| Performance evaluation indicators for government managers | Ability | Working attitude |
| Conscientiousness |
| Event handling capability |
| Innovation ability |
| Other capabilities |
| Organizational management capacity |
| Capacity for policy analysis |
| Moral character | Political morality |
| Professional ethics |
| Ethics and morality |
| Psychological morality |
| Autonomy |
| performance | Achievements in scientific research |
| Daily performance |
| Winning rate |
| Diligence | Attendance situation |
| Load |
| Work efficiency |
| Degree of diligence |

According to the survey of issuing the above indicators, this paper gives weight to each index of the performance evaluation of government management personnel, and constructs the judgment matrix by using the weighted average summation method. The sum product method is used to determine the weight coefficient of each judgment matrix[28,29]. Finally, through consistency detection, the detection process is as follows:

Table 2 Judgment matrix -****

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **—** |  |  |  |  |  |  |
|  | 1.0000 | 1.0321 | 1.4555 | 1.2365 | 1.0000 | 0.2365 |
|  | 0.6321 | 1.2236 | 1.0000 | 1.0000 | 1.2568 | 0.3214 |
|  | 0.6540 | 1.0000 | 1.2635 | 1.3654 | 1.0000 | 1.0000 |
|  | 0.8565 | 0.4526 | 0.4569 | 0.7569 | 1.9635 | 0.1652 |
|  | 1.0000 | 0.3251 | 0.1358 | 0.5236 | 1.2365 | 0.1356 |

The of the weight coefficient of the judgment matrix is less than 0.1, which satisfies the consistency detection.

Table 3 Judgment matrix -

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **—** |  |  |  |  |  |  |
|  | 1.0000 | 1.0355 | 1.1351 | 1.1656 | 1.0000 | 0.2235 |
|  | 0.3651 | 1.2236 | 1.0000 | 1.0000 | 1.0356 | 0.3261 |
|  | 0.6666 | 1.0000 | 1.2635 | 1.3546 | 1.0000 | 1.0000 |
|  | 1.23565 | 0.4657 | 0.4566 | 0.6526 | 1.1386 | 0.1352 |
|  | 1.0103 | 0.3246 | 0.1324 | 0.3103 | 1.1356 | 1.5686 |

The of the weight coefficient of the judgment matrix is less than 0.1, which satisfies the consistency detection.

**3.2. AHP model for performance evaluation.**

Based on the above evaluation indicators, a performance evaluation model of government administrators is proposed based on AHP, establishes a quantitative evaluation model of hierarchical analysis and performance of government administrators, and adopts F statistical analysis method to carry out government performance evaluation[30]. Regression analysis and adaptive adjustment of administrative staff management, establishment of quantitative evaluation model of financial expenditure and performance of government administrators, adjustment of financing structure using F statistic analysis method, administration based on AHP, the fuzzy comprehensive decision function of the performance evaluation of the administrative personnel of the government[31,32]:

 (8)

In which, , , . According to the correlation analysis of the linear fitting results of the performance evaluation of the government administrative personnel, the linear fitting formula is expressed as follows:

 (9)

According to the performance information fusion results of government administrators, the hierarchical analysis is carried out, and the constraint rules of performance evaluation are expressed as follows[33, 34]:

 (10)

s.t (11)

According to the above analysis, adaptive fuzzy scheduling method is used to mine and evaluate the big data performance of government administrators.

**3.3. Quantitative evaluation of performance of government administrators**

By using *F* statistic analysis method, the regression analysis of government administrative personnel management is carried out, and the pre-progressive weighting coefficient of performance evaluation is obtained as follows:

 (12)

 (13)

 (14)

In which,  is the asynchronous iterative coefficient of the performance evaluation of the government administrators, and  is the error adjustment coefficient of the performance evaluation of the government administrators:

 (15)

 (16)

Combined with the analytic hierarchy process, the grey scale quantification coefficient of performance evaluation is satisfied:

 (17)

If , the performance evaluation characteristics of the output meet the following requirements:

 (18)

Because

 (19)

 (20)

Thus, the time inversion statistical correlation coefficient of the performance evaluation modeling of government administrators is obtained as follows:

 (21)

While , then:

 (22)

While 时, then:

 (23)

The convergence function of performance evaluation satisfies:

 (24)

It can be seen that the statistical characteristic quantity of performance evaluation is greater than the threshold value, and the performance evaluation model of government administrators constructed in this paper is bounded convergent.