Regarding law thinking mode ideological exploration

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ABSTRACT

Law thinking reflects in every aspect of our life, apply law thinking to analyze things can make reasonable judgment, the paper makes fuzzy comprehensive evaluation on law thinking from law thinking guidance and education, law thinking daily application, law thinking handling way in problems, law thinking and law combination four aspects. By above result indication, it gets evaluation value in the interval 90-100, the weight is larger, and therefore evaluation result is better.

KEYWORDS

Law thinking; Fuzzy evaluation; Principles of philosophy; Mathematical model.
INTRODUCTION

In modern society, law plays important roles in our life, social order that centers on law also becomes more important, law regulates a person behavior, and also changes a person habits and thinking, in daily thinking, more law consciousnesses mix into our thoughts, which also means stronger legal concept is developing in personnel and society. However, law thinking establishment should contain numerous aspects; most existing in Chinese important law cases are law thinking guidance and education, law thinking daily application, law thinking handling way in problems, law thinking and law combination four aspects.

Law thinking is applying law and standing in the perspective of law to analyze affairs and things, getting correct reasonable world view and life view, bringing legal system consciousness into psychology, working on reflecting fair and just in every corner of society. Make correct judgment on things and affairs by law thinking.

With respect to present development, it can roughly divide law thinking into some main levels, first is philosophy level, in fact, law research is the exploration of philosophy, apply reasonable law thought to correct judge things is law thinking in philosophy level. Secondly is law level’s law thinking, the law level is also thinking and normalizing strictly followed laws and regulations, it highlights rationality and evidence. Finally is humanity, law thinking under morality criterion is maintaining humanity and thinking of humanity.

MODEL ESTABLISHMENTS

Summary of fuzzy comprehensive evaluation model

Utilize fuzzy comprehensive evaluation, steps are as following:

(1) Establish factor set $U$, $U = \{U_1, U_2, \cdots, U_k\}$

(2)Establish judgment set $V$ (evaluation set), $V = \{V_1, V_2, \cdots, V_n\}$

According to general evaluation system, define evaluation grade domain:

$V = \{V_1, V_2, V_3, V_4\}$

$= \{\text{Very good, good, normal, bad}\}$

(3) Establish judgment matrix fuzzy mapping from $U$ to $V$, it gets fuzzy relation as following matrix shows,

$R = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1n} \\ r_{21} & r_{22} & \cdots & r_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ r_{m1} & r_{m2} & \cdots & r_{mn} \end{bmatrix}$

(4)Establish weight set, $A = (a_1, a_2, \cdots, a_n)$, it meets conditions:

$\sum_{i=1}^{n} a_i = 1 \quad a_i \geq 0$
(5) Fuzzy relation \( R \) every line reflects the line influence factors to object judgment extent, and meanwhile, \( R \) every column reflects the column influence factors to object judgment extent.

\[
\sum_{i=1}^{n} r_{ij} \quad j = 1, 2, 3, \cdots, m
\]

\[
B = A \cdot R
\]

\[
B = \left( a_1, a_2, a_3, \cdots, a_n \right) \cdot \begin{bmatrix}
  r_{11} & r_{12} & \cdots & r_{1n} \\
  r_{21} & r_{22} & \cdots & r_{2n} \\
  \vdots & \vdots & \ddots & \vdots \\
  r_{m1} & r_{m2} & \cdots & r_{mn}
\end{bmatrix}
\]

\[
= \left( b_1, b_2, b_3, \cdots, b_n \right)
\]

In \( V \), fuzzy combination is evaluation set \( B \). Based on above described facts, actual change model is:

\[
\begin{array}{c}
A \quad \quad \quad \quad \quad B \\
\hline
\end{array}
\]

Figure 1 : Change model

As Figure 1 show, it gets fuzzy comprehensive evaluation change model, and can establish corresponding every factor grade evaluation transformation function, evaluation factors \( u_1, u_2, u_3, u_4, u_5 \) membership functions can be expressed as following:

\[
u_1(u_i) = \begin{cases}
0.5(1 + \frac{u_i - k_1}{u_i - k_2}), & u_i \geq k_1 \\
0.5(1 - \frac{k_1 - u_i}{k_1 - k_2}), & k_2 \leq u_i < k_1 \\
0, & u_i < k_2
\end{cases}
\]

\[
u_2(u_i) = \begin{cases}
0.5(1 - \frac{u_i - k_1}{u_i - k_2}), & u_i \geq k_1 \\
0.5(1 + \frac{k_1 - u_i}{k_1 - k_2}), & k_2 \leq u_i < k_1 \\
0.5(1 - \frac{u_i - k_1}{k_1 - k_2}), & k_3 \leq u_i < k_2 \\
0.5(1 - \frac{k_3 - u_i}{k_3 - u_i}), & u_i < k_3
\end{cases}
\]

\[
u_3(u_i) = \begin{cases}
0, & u_i \geq k_2 \\
0.5(1 - \frac{k_2 - u_i}{k_2 - k_3}), & k_3 \leq u_i < k_2 \\
0.5(1 + \frac{k_2 - u_i}{k_2 - u_i}), & u_i < k_3
\end{cases}
\]

Combine with fuzzy evaluation model to evaluate law thinking
Establish factor set \( U, U = (U_1, U_2, U_3, U_4) \). Among them law thinking guidance and education \( U_1 \), law thinking daily application \( U_2 \), law thinking handling way in problems \( U_3 \), law thinking and law combination \( U_4 \), it gets TABLE 1.

**TABLE 1 : Law thinking evaluation indicator system**

<table>
<thead>
<tr>
<th>Law thinking guidance and education ( U_1 )</th>
<th>Law thinking daily application ( U_2 )</th>
<th>Law thinking handling way in problems ( U_3 )</th>
<th>Law thinking and law combination ( U_4 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law publicity ( u_{11} )</td>
<td>Understanding on main civil laws ( u_{21} )</td>
<td>Conciliation between the two parties ( u_{31} )</td>
<td>Consciousness of appealing to court ( u_{41} )</td>
</tr>
<tr>
<td>Relative cases news reporting ( u_{12} )</td>
<td>Awareness of calling the police ( u_{22} )</td>
<td>Judgment ( u_{32} )</td>
<td>Receptivity on court judgment ( u_{42} )</td>
</tr>
<tr>
<td>Law office development ( u_{13} )</td>
<td>Rational handling ability ( u_{23} )</td>
<td>Mandatory lawyer ( u_{33} )</td>
<td>Consciousness of appealing to court ( u_{43} )</td>
</tr>
<tr>
<td>Status of law application ( u_{14} )</td>
<td>Law preaching ( u_{24} )</td>
<td>Police mediation ( u_{34} )</td>
<td></td>
</tr>
<tr>
<td>Law using ways and methods ( u_{15} )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

By TABLE 2 listed factors, it gets evaluation sets.

\[
U_1 = \{u_{11}, u_{12}, u_{13}, u_{14}\}
\]
\[
U_2 = \{u_{21}, u_{22}, u_{23}, u_{24}, u_{25}\}
\]
\[
U_3 = \{u_{31}, u_{32}, u_{33}\}
\]
\[
U_4 = \{u_{41}, u_{42}, u_{43}, u_{44}\}
\]

By collecting data and analyzing, it gets four kinds of factors importance degrees ranking statistics, as TABLE 2 shows.

**TABLE 2 : Four kinds of factors importance degree ranking statistics**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Rank 1</th>
<th>Rank 2</th>
<th>Rank 3</th>
<th>Rank 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law thinking guidance and education ( U_1 )</td>
<td>25</td>
<td>7</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Law thinking daily application ( U_2 )</td>
<td>8</td>
<td>17</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Law thinking handling way in problems ( U_3 )</td>
<td>0</td>
<td>10</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Law thinking and law combination ( U_4 )</td>
<td>3</td>
<td>1</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

By TABLE 2 sorting, it gets law thinking guidance and education, law thinking daily application, law thinking handling way in problems, law thinking and law combination four aspects ranking matrixes.

\[
U_2 = \{25, 7, 3, 0\}
\]
$U_2 = \{8,17,9,0\}$

$U_3 = \{0,10,12,13\}$

$U_4 = \{3,10,20\}$

Obtained weighted vector from rank 1 to rank 2

$\beta = \{\beta_1, \beta_2, \beta_3, \beta_4\} = \{0.4, 0.3, 0.2, 0.1\}$

$U_i^* = U_i \cdot \beta^T$

$U_1^* = 12$, $U_2^* = 9.7$, $U_3^* = 6$, $U_4^* = 5$

The paper takes normalization processing

$U_1^* = 0.35$, $U_2^* = 0.3$, $U_3^* = 0.2$, $U_4^* = 0.15$

It gets

$A = (0.35 \ 0.3 \ 0.2 \ 0.15)$

The paper gets remarks membership by law thinking evaluation, as TABLE 3 shows.

<table>
<thead>
<tr>
<th>Evaluation way</th>
<th>Set scores interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-60</td>
</tr>
<tr>
<td>Very good</td>
<td>0</td>
</tr>
<tr>
<td>Good</td>
<td>0</td>
</tr>
<tr>
<td>Normal</td>
<td>0.05</td>
</tr>
<tr>
<td>Bad</td>
<td>0.95</td>
</tr>
</tbody>
</table>

The paper through one law thinking each indicator obtained evaluation, it gets TABLE 4.

<table>
<thead>
<tr>
<th>Each layer indicator</th>
<th>Evaluation value</th>
<th>Each layer indicator</th>
<th>Evaluation value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law publicity $u_{11}$</td>
<td>Excellent</td>
<td>Conciliation between the two parties $u_{31}$</td>
<td>Excellent</td>
</tr>
<tr>
<td>Relative cases news reporting $u_{12}$</td>
<td>Excellent</td>
<td>Judgment $u_{32}$</td>
<td>Good</td>
</tr>
<tr>
<td>Law office development $u_{13}$</td>
<td>Normal</td>
<td>Mandatory lawyer $u_{33}$</td>
<td>Good</td>
</tr>
<tr>
<td>Status of law application $u_{14}$</td>
<td>Normal</td>
<td>Police mediation $u_{34}$</td>
<td>Normal</td>
</tr>
<tr>
<td>Law using ways and methods $u_{15}$</td>
<td>Normal</td>
<td>Consciousness of appealing $u_{41}$</td>
<td>Excellent</td>
</tr>
<tr>
<td>Understanding on main civil laws $u_{21}$</td>
<td>Excellent</td>
<td>Receptivity on court judgment $u_{42}$</td>
<td>Excellent</td>
</tr>
</tbody>
</table>
By above model, it gets single layer indicator weight factor fuzzy set is:

\[ U_1^* = \{ U_{11}, U_{12}, U_{13}, U_{14}, U_{15} \} = \{ 0.25 \ 0.25 \ 0.2 \ 0.15 \ 0.15 \} \]

\[ U_2^* = \{ U_{21}, U_{22}, U_{23}, U_{24} \} = \{ 0.54 \ 0.1 \ 0.24 \ 0.14 \}\]

\[ U_3^* = \{ U_{31}, U_{32}, U_{33}, U_{34} \} = \{ 0.4 \ 0.3 \ 0.1 \ 0.2 \} \]

\[ U_4^* = \{ U_{41}, U_{42}, U_{43} \} = \{ 0.3 \ 0.4 \ 0.3 \} \]

By TABLE 5, and combine with TABLE 3 remarks membership, it gets law thinking guidance and education, law thinking daily application, law thinking handling way in problems, law thinking and law combination each aspect evaluation set.

Law thinking guidance and education
\[
U_1 = \begin{pmatrix}
0 & 0 & 0.05 & 0.95 \\
0 & 0 & 0.05 & 0.95 \\
0 & 0.05 & 0.95 & 0.05 \\
0 & 0.05 & 0.95 & 0.05 \\
0 & 0.05 & 0.95 & 0.05
\end{pmatrix}
\]

Law thinking daily application
\[
U_2 = \begin{pmatrix}
0 & 0 & 0.05 & 0.95 \\
0 & 0.05 & 0.9 & 0.05 \\
0 & 0.05 & 0.9 & 0.05 \\
0.05 & 0.9 & 0.05 & 0
\end{pmatrix}
\]

Law thinking handling way in problems
\[
U_3 = \begin{pmatrix}
0 & 0 & 0.05 & 0.95 \\
0 & 0 & 0.05 & 0.95 \\
0 & 0 & 0.05 & 0.95 \\
0 & 0.05 & 0.9 & 0.05
\end{pmatrix}
\]

Law thinking and law combination
\[
U_4 = \begin{pmatrix}
0 & 0 & 0.05 & 0.95 \\
0 & 0.05 & 0.9 & 0.05 \\
0 & 0.05 & 0.9 & 0.05
\end{pmatrix}
\]

By formula
\[ B_i = A_i \cdot R_i \]

Make normalization processing with obtained \( B_i \), it gets fuzzy evaluation matrix.
\[
B = \begin{bmatrix}
B_1 \\
B_2 \\
B_3 \\
B_4 \\
\end{bmatrix} = \begin{bmatrix}
0.17 & 0.17 & 0.13 & 0.53 \\
0 & 0.12 & 0.35 & 0.52 \\
0.09 & 0.45 & 0.28 & 0.18 \\
0.13 & 0.21 & 0.31 & 0.32 \\
\end{bmatrix}
\]

It gets comprehensive evaluation value:

\[
Z = U^* \cdot B = (0.33 \quad 0.28 \quad 0.22 \quad 0.17)
\]

To sum up, fuzzy comprehensive evaluation model excludes traditional evaluation model shortcomings; it not only makes it simple in calculation and fully considers research objects possessed systematic and comprehensive features. By above results indication, it gets that evaluation value \( Z \) in the interval 90-100, its weight is larger, so evaluation result is better.

**CONCLUSION**

The paper firstly researches on fuzzy comprehensive evaluation model, finds out the evaluation model advantages and application extent, and utilizes the model to evaluate law thinking ways and thoughts. And combine with status to make comparison, it can get the model accuracy and authenticity is higher.

In practical status, it contains many problems that tend to get involved in lots of uncertain factors, fuzzy comprehensive evaluation is represent some factor sets into people awareness again. By establishing attributes scale on one object, carry on fuzzy mathematical analysis of one object, first analyzed object should have fuzzy or uncertainty and objects to be researched have multiple influential factors limitations, therefore the paper judges law thinking ways and thoughts and understands things or affairs influence studies according to fuzzy comprehensive evaluation method.

**REFERENCES**


