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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,

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

(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.

$$\sum_{i=1}^n r_{ij} \quad j = 1, 2, 3, \dots, m$$

$$B = A \cdot R$$

$$= (a_1, a_2, a_3, \dots, a_n) \cdot \begin{bmatrix} r_{11} & r_{12} & \dots & r_{1n} \\ r_{21} & r_{22} & \dots & r_{2n} \\ \vdots & \vdots & & \vdots \\ r_{m1} & r_{m2} & \dots & r_{mn} \end{bmatrix}$$

$$= (b_1, b_2, b_3, \dots, b_n)$$

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

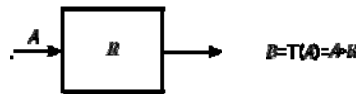


Figure 1 : Change model

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:

$$u_{v1}(u_i) = \begin{cases} 0.5(1 + \frac{u_i - k_1}{u_i - k_2}), & u_i \geq k_1 \\ 0.5(1 - \frac{k_1 - u_i}{k_1 - k_2}), & k_2 \leq u_i < k_1 \\ 0, & u_i < k_2 \end{cases}$$

$$u_{v2}(u_i) = \begin{cases} 0.5(1 - \frac{u_i - k_1}{u_i - k_2}), & u_i \geq k_1 \\ 0.5(1 + \frac{k_1 - u_i}{k_1 - k_2}), & k_2 \leq u_i < k_1 \\ 0.5(1 - \frac{u_i - k_3}{k_2 - k_3}), & k_3 \leq u_i < k_2 \\ 0.5(1 - \frac{k_3 - u_i}{k_2 - u_i}), & u_i < k_3 \end{cases}$$

$$u_{v1}(u_i) = \begin{cases} 0, & u_i \geq k_2 \\ 0.5(1 - \frac{k_1 - u_i}{k_2 - k_3}), & k_3 \leq u_i < k_2 \\ 0.5(1 + \frac{k_3 - u_i}{k_2 - u_i}), & u_i < k_3 \end{cases}$$

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

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
Law publicity u_{11}	Understanding on main civil laws u_{21}	Conciliation between the two parties u_{31}	Consciousness of appealing u_{41}
Relative cases news reporting u_{12}	Awareness of calling the police u_{22}	Judgment u_{32}	Receptivity on court judgment u_{42}
Law office development u_{13}	Rational handling ability u_{23}	Mandatory lawyer u_{33}	Consciousness of appealing to court u_{43}
Status of law application u_{14}	Law preaching u_{24}	Police mediation u_{34}	
Law using ways and methods u_{15}			

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

Classification	Rank 1	Rank 2	Rank3	Rank 4
Law thinking guidance and education U_1	25	7	3	0
Law thinking daily application U_2	8	17	9	0
Law thinking handling way in problems U_3	0	10	12	13
Law thinking and law combination U_4	3	1	10	20

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.

$$U_2 = \{25, 7, 3, 0\}$$

$$U_2 = \{8, 17, 9, 0\}$$

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

$$U_4 = \{3, 1, 10, 20\}$$

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

$$\bar{A} = (0.35 \quad 0.3 \quad 0.2 \quad 0.15)$$

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

TABLE 3 : Remarks membership

Evaluation way	Set scores interval			
	0-60	60-80	80-90	90-100
Very good	0	0	0.05	0.95
Good	0	0.05	0.9	0.05
Normal	0.05	0.9	0.05	0
Bad	0.95	0.05	0	0

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

TABLE 4 : Law thinking evaluation each indicator obtained evaluation value

Each layer indicator	Evaluation value	Each layer indicator	Evaluation value
Law publicity u_{11}	Excellent	Conciliation between the two parties u_{31}	Excellent
Relative cases news reporting u_{12}	Excellent	Judgment u_{32}	Good
Law office development u_{13}	Normal	Mandatory lawyer u_{33}	Good
Status of law application u_{14}	Normal	Police mediation u_{34}	Normal
Law using ways and methods u_{15}	Normal	Consciousness of appealing u_{41}	Excellent
Understanding on main civil laws u_{21}	Excellent	Receptivity on court judgment u_{42}	Excellent

Awareness of calling the police u_{22}	Excellent	Consciousness of appealing to court u_{43}	Normal
Rational handling ability u_{23}	Excellent		
Law preaching u_{24}	Good		

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.

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

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

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

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

By formula

$$B_i = A_i \cdot R_i$$

Make normalization processing with obtained B_i , it gets fuzzy evaluation matrix.

$$\bar{B} = \begin{pmatrix} B_1 \\ B_2 \\ B_3 \\ B_4 \end{pmatrix} = \begin{pmatrix} 0.17 & 0.17 & 0.13 & 0.53 \\ 0 & 0.12 & 0.35 & 0.52 \\ 0.09 & 0.45 & 0.28 & 0.18 \\ 0.13 & 0.21 & 0.31 & 0.32 \end{pmatrix}$$

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.

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