Chinese traditional culture contemporary value fuzzy comprehensive evaluation

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ABSTRACT

Fuzzy comprehensive evaluation can eliminate numerous uncertain factors and get correct scores regions, based on this purpose, the paper combines with fuzzy comprehensive evaluation to evaluate urbanization, during solving process, firstly establish factor set U, it includes U_1 humanistic thought focuses on life and society entering, U_2 moral education focuses on ethics, U_3 life philosophy focuses on mean harmonious, U_4 culture personality focuses on toughness and tenaciousness these four main aspects. And establish detailed evaluation set, make comments on traditional culture contemporary values in future view of life, humanistic thought influence range, harmonious society avocation and implementation, adults anti-setback abilities and others fifteen aspects, it gets that Chinese traditional culture has very high contribution degree on contemporary life and social value. © 2014 Trade Science Inc. - INDIA

INTRODUCTION

With countries frequently exchange, all countries' cultures have been gradually intermingled, Chinese traditional cultural values have also more and more recognized in the world, Chinese traditional cultures include hundred school of thought, poetry and painting, Chinese opera, Chinese architecture and so on. Its inheritance importance is self-evident.

Chinese traditional cultures are gradually evolved by Chinese civilization, set off by Chinese special culture, is Chinese people important spiritual sustenance. With Chinese several thousand years' civilization changes, nowadays, Chinese traditional cultures are constantly revealing, improving and developing under contemporary impacts.

By TABLE 1, it is clear that Chinese all kinds of cultural facilities, genres growth and huge changes from year 1978 to 1993, as following TABLE 1 show.

MODEL ESTABLISHMENTS

China is a country with long history, at the back of rich cultural deposits is enormous population base, and population problem always is the key factor that restricts Chinese development.

By TABLE 2, it is clear as a populous country with world 1/5 population, surely it has its profound cultural tradition, therefore the paper establishes fuzzy hierarchical model to research on Chinese traditional culture contemporary values.

TABLE 1 : Year 1978 to 1993 cultural facilities, genres changes

	Year 1978	**Year1993**
Film studio	17	22
Theatre	1095	2011
Museum	349	1130
Public Library	1256	2579
Culture Center	2748	2886
TV station	32	684
Radio station	93	987
Published books types	14987	96761
Publish magazine	930	7011
Publish newspaper	186	943

TABLE 2 : Chinese population size

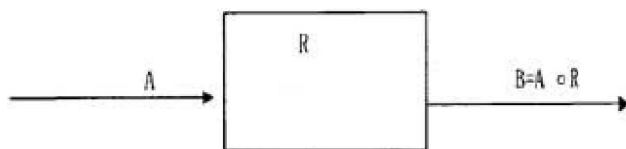| Year	Gross population (A hundred million)
2002	12.8453
2003	12.9227
2004	12.9988
2005	13.0756
2006	13.1448
2007	13.2129
2008	13.2802
2009	13.4005
2010	13.39724
2011	13.70536

Figure 1: Transformation figure

Generalization of fuzzy comprehensive evaluation model

Therefore the paper uses fuzzy comprehensive evaluation to analyze Chinese main traditional culture contribution degree on contemporary life and social values, steps are as following:

(1) Establish factor set U ;

(2) Establish evaluation set V (evaluation set);

(3) Define fuzzy mapping, it gets fuzzy relation:

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

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

$$\sum_{i=1}^{n} a_i = 1 \quad a_i \geq 0$$

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

$$B = A \cdot R$$

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

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

In V , fuzzy combination is evaluation set B . It can establish corresponding every factor grade evaluation transformation function, transformation figure is as Figure 1 show.

Evaluation factor U_1 , U_2 , U_3 , U_4 , U_5 membership functions can be expressed as following:

$$u_{v1}(u_1) = \begin{cases} 0.5(1 + \dfrac{u_i - k_1}{u_i - k_2}), & u_i \geq k_1 \\ 0.5(1 - \dfrac{k_1 - u_i}{k_1 - k_2}), & k_2 \leq u_i < k_1 \\ 0, & u_i < k_2 \end{cases}$$

$$u_{v2}(u_1) = \begin{cases} 0.5(1 - \dfrac{u_i - k_1}{u_i - k_2}), & u_i \geq k_1 \\ 0.5(1 + \dfrac{k_1 - u_i}{k_1 - k_2}), & k_2 \leq u_i < k_1 \\ 0.5(1 - \dfrac{u_i - k_3}{k_2 - k_3}), & k_3 \leq u_i < k_2 \\ 0.5(1 - \dfrac{k_3 - u_i}{k_2 - u_i}), & u_i < k_3 \end{cases}$$

$$u_{v1}(u_1) = \begin{cases} 0, & u_i \geq k_2 \\ 0.5(1 - \dfrac{k_1 - u_i}{k_2 - k_3}), & k_3 \leq u_i < k_2 \\ 0.5(1 + \dfrac{k_3 - u_i}{k_2 - u_i}), & u_i < k_3 \end{cases}$$

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Combine with fuzzy evaluation model to evaluate urbanization contribution degree on contemporary values policies

Establish factor set U, $U = (U_1 \quad U_2 \quad U_3 \quad U_4)$. Among them, U_1 is humanistic thought focuses on life and society entering, U_2 is moral education focuses on ethics, U_3 is life philosophy focuses on mean harmonious, U_4 is culture personality focuses on toughness and tenaciousness, it gets TABLE 3.

It gets evaluation set:

$$U_1 = \{u_{11}, u_{12}, u_{13}, u_{14}, u_{15}\}$$

$$U_2 = \{u_{21}, u_{22}, u_{23}\}$$

$$U_3 = \{u_{31}, u_{32}, u_{33}, u_{34}\}$$

$$U_4 = \{u_{41}, u_{42}, u_{43}\}$$

By collecting data and analyzing, it gets humanistic thought focuses on life and society entering, moral education focuses on ethics, life philosophy focuses on mean harmonious, culture personality focuses on toughness

TABLE 3 : Contemporary values evaluation indicator system

Humanistic thought focuses on life and society entering U_1	Moral education focuses on ethics U_2	Life philosophy focuses on mean harmonious U_3	Culture personality focuses on toughness and tenaciousness U_4
Future view of life u_{11}	Population education degree u_{21}	Harmonious phenomenon proportion u_{31}	Juvenile anti-setback ability u_{41}
Contemporary view of life values u_{12}	Ethos of respecting for seniority u_{22}	Moderation ethos references u_{32}	Adults anti-setback ability u_{42}
Contemporary life and society entering view u_{13}	Amount of education schools u_{23}	Harmonious society advocation and implementation u_{33}	Ethos that society advocates toughness and tenaciousness u_{43}
Gender discrimination u_{14}		Philosophy phenomenon reflection u_{34}	
Humanistic thought influence range u_{15}			

and tenaciousness these four factors importance degrees ranking statistics, as TABLE 4 show.

But:

$$U_2 = \{23, 7, 3, 0\}$$

$$U_2 = \{7, 18, 8, 0\}$$

$$U_3 = \{0, 9, 13, 11\}$$

$$U_4 = \{3, 0, 9, 21\}$$

From rank 1 to rank 2, obtained weighted vector:

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

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

$U_1^* = 12$, $U_2^* = 9.8$, $U_3^* = 6$, $U_4^* = 5$

The paper makes normalization processing: $U_1^* = 0.35$, $U_2^* = 0.3$, $U_3^* = 0.2$, $U_4^* = 0.15$

It gets: $\bar{A} = \begin{pmatrix} 0.35 & 0.3 & 0.2 & 0.15 \end{pmatrix}$

TABLE 4: Four kinds of factors importance degrees ranking statistics

Classification	Rank 1	Rank 2	Rank 3	Rank 4
Future population status U_1	23	7	3	0
Education and labors supply U_2	7	18	8	0
Employment U_3	0	9	13	11
Provision for the aged U_4	3	0	9	21

By setting remarks membership, as TABLE 5 show, it makes evaluation on each factor.

Through contemporary values policies urbanization influence obtained evaluation, the paper gets TABLE 6.

By above model, it gets single layer indicator weight factor fuzzy set is:

$A_1 = \{u_{11}, u_{12}, u_{13}, u_{14}, u_{15}\} = \{0.25\ 0.25\ 0.2\ 0.15\ 0.15\}$

$A_2 = \{u_{21}, u_{22}, u_{23}\} = \{0.54, 0.34, 0.12\}$

TABLE 5 : Remarks membership

Evaluation way	Set contribution degree 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

$A_3 = \{u_{31}, u_{32}, u_{33}, u_{34}\} = \{0.4\ 0.3\ 0.1\ 0.2\}$

The paper by TABLE 21, and combine with TABLE 20 remarks membership, it gets evaluation set of humanistic thought focuses on life and society entering, moral education focuses on ethics, life philosophy focuses on mean harmonious, culture personality focuses on toughness and tenaciousness.

Humanistic thought focuses on life and society entering:

$$R_1 = \begin{pmatrix} 0 & 0 & 0.05 & 0.95 \\ 0 & 0 & 0.05 & 0.95 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0.05 & 0.9 & 0.05 & 0 \end{pmatrix}$$

Moral education focuses on ethics:

TABLE 6 : Contemporary values policies urbanization influence evaluation value

Each layer indicator	Evaluation value	Each layer indicator	Evaluation value
Future view of life u_{11}	Very good	Harmonious phenomenon proportion u_{31}	Very good
Contemporary view of life values u_{12}	Very good	Moderation ethos references u_{32}	Good
Contemporary life and society entering view u_{13}	Good	Harmonious society advocation and implementation u_{33}	Good
Gender discrimination u_{14}	Good	Philosophy phenomenon reflection u_{34}	Normal
Humanistic thought influence range u_{15}	Normal	Juvenile anti-setback ability u_{41}	Good
Population education degree u_{21}	Very good	Adults anti-setback ability u_{42}	Good
Ethos of respecting for seniority u_{22}	Good	Ethos that society advocates toughness and tenaciousness u_{43}	Normal
Amount of education schools u_{23}	Normal		

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$$R_2 = \begin{pmatrix} 0 & 0 & 0.05 & 0.95 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0.05 & 0.9 & 0.05 & 0 \end{pmatrix}$$

Life philosophy focuses on mean harmonious:

$$R_3 = \begin{pmatrix} 0 & 0 & 0.05 & 0.95 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0.05 & 0.9 & 0.05 & 0 \end{pmatrix}$$

Culture personality focuses on toughness and tenaciousness:

$$R_4 = \begin{pmatrix} 0 & 0.05 & 0.9 & 0.05 \\ 0 & 0.05 & 0.9 & 0.05 \\ 0.05 & 0.9 & 0.05 & 0 \end{pmatrix}$$

$$B_i = A_i \cdot R_i$$

Make normalization processing with solved B_i, it gets the second layer fuzzy evaluation matrix:

$$\bar{B} = \begin{pmatrix} B_1 \\ B_2 \\ B_3 \\ B_4 \end{pmatrix} = \begin{pmatrix} 0.075 & 0.1525 & 0.3475 & 0.4925 \\ 0.006 & 0.1250 & 0.3390 & 0.5300 \\ 0.0100 & 0.2000 & 0.3900 & 0.4000 \\ 0.0150 & 0.3050 & 0.6450 & 0.0350 \end{pmatrix}$$

$$Z = \bar{A} \cdot \bar{B} = \begin{pmatrix} 0.0323 & 0.1766 & 0.3981 & 0.4166 \end{pmatrix}$$

Because $0.4166 > 0.3981 > 0.1766 > 0.0323$, Chinese traditional culture has very good contributions to contemporary values, which shows urbanization process has good promotions of contemporary values implementation.

CONCLUSION

The paper on the basis of fuzzy comprehensive evaluation, it selects urbanization relative policies to contemporary values contribution degree on humanistic thought focuses on life and society entering, moral education focuses on ethics, life philosophy focuses on mean harmonious, culture personality focuses on toughness and tenaciousness these aspects to make evaluation, and establish detailed evaluation set, make comments on traditional culture contemporary values in future view of life, humanistic thought influence range, harmonious society advocation and implementation, adults anti-set-back abilities and others fifteen aspects, it gets that Chinese traditional culture has very high contribution degree on contemporary life and social value.

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