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# Research on the Cultural Consumption Potential and Influencing Factors of Urban Residents in China Based on Cultural Consumption Theory And Classical Consumption Theory



**Abstract:** Investment, consumption and export are important driving forces to promote economic growth. In the case that investment and export are slightly insufficient, leading Chinese residents to consume and expanding domestic demand have become an important direction to promote high-quality economic development. As an important part of residents' consumption and an important direction for upgrading residents' consumption structure, cultural consumption plays an important role in promoting high-quality economic development. On the one hand, cultural consumption is a powerful engine to promote high-quality economic development and stimulate economic development potential. On the other hand, different from material consumption, cultural consumption has potential and inheritance, and will continue after forming consumption inertia, with vast room for improvement. The overall scale of cultural consumption of urban residents in China is small, the growth rate is slow, and there are problems such as regional structural imbalance and mismatch between supply and demand. In this context, this paper takes consumption potential as the main entry point, and provides reference suggestions for expanding domestic demand from the level of stimulating cultural consumption potential.

**Keywords:** economic growth; Household consumption; Cultural consumption; Urban dweller

## 1 Introduction

Compared with developed countries, China's cultural consumption is still weak. In 2020, China's per capita GDP is well over \$3,000, while residents' cultural consumption accounts for only 9.6%. From this point of view, the current development degree of Chinese residents' cultural consumption is low, and the room for improvement is large. At the same time, the change of the main contradiction in society represents that the transformation and upgrading of the consumption structure of residents has become an inevitable trend, and cultural consumption is an important part of the transformation and upgrading of the consumption structure. In 2018, The General Office of the State Council of China deployed to further reduce market access in the field of service consumption, and the continuous improvement of policies and support guarantees have enabled the rapid development of the cultural industry and further activated the cultural consumption potential of residents. China's top 20 report pointed out that it is necessary to promote the high-quality development of China's cultural industry from six dimensions, to meet the growing spiritual and cultural needs of the people, and pay attention to the quality of products and services and spiritual strength. At present, the development level of Chinese residents' cultural consumption lags behind, and it is urgent to stimulate the potential of cultural consumption and stimulate the level of cultural consumption.

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## **2. Cultural consumption potential of urban residents in China**

### **2.1 Construction of potential index system**

This paper constructs an indicator system for the measurement of urban residents' cultural consumption potential. First, it identifies and selects specific corresponding indicators according to the principle of index system construction, and finally forms a comprehensive measurement indicator system.

#### **2.1.1 Principles of index system construction**

Based on the principles of scientificity, comprehensiveness, hierarchy and operability, this paper measures the cultural consumption potential index of urban residents from the perspective of macro-economy. Among them, the scientific principle means that the measurement index system must follow the law of economic development, ensure that the measurement results are in line with the basic situation of social development, and the selection of indicators must reflect the main content of cultural consumption potential, data processing and scientific empirical measurement methods. Cultural consumption potential includes many factors such as cultural consumption needs, cultural consumption ability and cultural consumption environment, which should not only fully reflect the hierarchical structure of the index system, but also ensure the comprehensive analysis of multi-factors. The principle of operability means that the selected indicators are qualitative or quantitative indicators obtained through statistics and observation, and the data source is clear and clear.

#### **2.1.2 Indicator identification and selection**

Based on the definition of cultural consumption potential and the analysis of the three sub-dimensions of cultural consumption capacity, needs and environment, this paper, following the principle of system construction and drawing on existing relevant research results, attempts to establish a measurement index system of urban residents' cultural consumption potential (see Table 2-1). The measurement system consists of three dimensions: cultural consumption capacity, cultural consumption need and cultural consumption environment. To comprehensively reflect and evaluate the cultural consumption potential level of urban residents. The specific index composition and calculation of each system are described as follows:

##### **1. Cultural consumption ability**

Cultural consumption ability includes two dimensions: monetary payment ability and cultural decoding ability of cultural and entertainment products or services. The income level of urban residents represents the ability to pay money, which is reflected by wage income, business income, property income and transfer net income. In addition, education is an important way to enhance the ability to decode culture. The education level of residents is comprehensively reflected by four indicators: the proportion of the population in higher education, the average years of schooling, the types of books and textbooks for children and children, and the educational expenditure of each region.

##### **2. Cultural consumption needs**

Consumption needs include four dimensions: current consumption expenditure, insufficient consumption, restricting factors and promoting factors. First, the per capita actual expenditure on culture, education and entertainment reflects the apparent demand of urban residents' cultural consumption. Then, the proportion of urban per capita expenditure on culture, education and entertainment in urban per capita consumption expenditure and the Engel coefficient of urban residents are used to measure the degree of underconsumption. Finally, based on the existing research of scholars [1-2], this paper selects the old-age dependency ratio, housing price and consumer

price index as the restricting factors, and the number of mobile phones and the child dependency ratio as the promoting factors of cultural consumption.

### 3. Cultural consumption environment

The consumption environment includes four dimensions: infrastructure supported by the government, economic environment, natural environment and social security. The index of infrastructure dimension selected the number of public library institutions, the number of art performing groups, and the number of museums. In the dimension of economic environment, the added value of tertiary industry and GDP per capita are selected as two indicators. The dimensions of natural environment include the area of cleaning and cleaning and the per capita green area of urban parks. In the dimension of social security, the number of medical and health institutions, the number of urban workers participating in basic medical insurance, the number of basic pension insurance, and the number of people participating in unemployment insurance are selected as four indicators.

#### 2.2 Measurement methods and data sources

##### 2.2.1 Calculation method

This paper uses the entropy method to comprehensively measure the cultural consumption potential of urban residents. Entropy method is a relatively objective method to determine the weight of indicators, and has wide applicability. The smaller the information entropy of the specific index, the more information contained, and the higher the corresponding weight. The measurement steps are as follows: First, the original data is standardized; Secondly, calculate the index weight; Finally, the cultural consumption potential value of each province and city from 2002 to 2020 is calculated.

##### 1. Raw indicator processing

Different indicators correspond to different dimensions and units, and range standardization is carried out on the original data. The formula is as follows:

$$X'_{ij} = \frac{X_{ij} - \min X_{ij}}{\max X_{ij} - \min X_{ij}} + 0.001$$

$$X'_{ij} = \frac{\max X_{ij} - X_{ij}}{\max X_{ij} - \min X_{ij}} + 0.001 \quad (2-1)$$

In the formula,  $X_{ij}$  is the JTH indicator of the  $i$  province and city,  $\min X_{ij}$  and  $\max X_{ij}$  are the minimum and maximum values of the indicators respectively. At the same time, add 0.001 to the standardized formula to avoid negative or zero values of standardized data.

##### 2. Calculate the indicator weight

First, calculate the specific gravity of the JTH index  $\rho_{ij}$  of the  $i$  province and city:

$$\rho_{ij} = X'_{ij} / \sum_{i=1}^m X'_{ij} \quad (2-2)$$

Secondly, by substituting  $k=1/\ln m$ , where  $m$  is the number of provinces and cities, the information entropy  $e_j$  of the JTH index is calculated.

$$e_j = -k \sum_{i=1}^m \rho_{ij} \ln \rho_{ij} \quad (2-3)$$

Thirdly, the redundancy  $D_j$  of information entropy is calculated.

$$D_j = 1 - e_j(2-4)$$

Finally, the index weight  $W_j$  is calculated, where  $n$  is the number of calculated indicators.

$$W_j = D_j / \sum_{j=1}^n D_j(2-5)$$

### 3. Comprehensive calculation

This paper first uses the entropy method to determine the weight of the indicators, and then uses a simple linear weighting method to calculate the comprehensive measurement value of all cultural consumption potential indicators in 31 provinces and cities in each year. The comprehensive measurement function is as follows:

$$F_i = \sum_{j=1}^n W_j X'_{ij}(2-6)$$

#### 2.2.2 Data sources and description

##### 1. Data source

The data used in this paper are from China Statistical Yearbook and China Cultural and Related Industries Statistical Yearbook from 2002 to 2021. The missing data of individual years are replaced by the mean of adjacent years.

##### 2. Descriptive statistics

Due to the length of the paper, this paper only carries out descriptive statistical analysis on specific indicators in the 2020 potential indicator system. Table 2-2 reflects the fluctuation range of potential measurement indicators in each province and city.

Table 2-2 Descriptive statistics of cultural consumption potential indicators of urban residents in China in 2020

Specific index	Maximum value	Minimum value	Mean value	Maximum value / Minimum value
Wage income	44619.02	17543.25	25608.53	2.54
Operating income	8672.10	684.96	4134.67	12.66
Property income	13152.38	1293.19	4080.26	10.17
Transfer income	19687.09	2164.42	8429.21	9.10
Proportion of people in higher education	0.42	0.11	0.17	3.88
Average years of schooling	12.64	6.75	9.88	1.87
Number of children's books and textbooks	7683.00	101.00	2092.32	76.07
Educational expenditure by region	49187551.00	2532754.00	14842165.52	19.42
Per capita expenditure on culture, education and	3962.59	1015.13	2427.59	3.90

entertainment in urban areas				
Per capita consumption of culture, education and entertainment	0.13	0.04	0.09	3.08
Engel coefficient	0.38	0.21	0.30	1.80
Old-age dependency ratio	25.48	8.13	18.83	3.13
Housing price	37665.00	5807.00	10759.32	6.49
Consumer price	103.40	101.30	102.24	1.02
Child dependency ratio	37.17	13.25	25.79	2.81
Number of mobile phones	287.70	208.10	248.15	1.38
Number of public library establishments	207.00	23.00	103.58	9.00
Number of performing arts organizations	2391.00	30.00	566.68	79.70
Number of museum institutions	577.00	8.00	175.71	72.13
Gross regional product per capita	164158.00	35848.00	70658.23	4.58
Added value of the tertiary industry	62550.80	1037.50	17710.13	60.29
Per capita green park area	21.02	9.05	14.35	2.32
Clean and clean the area	120331.00	2140.00	31470.84	56.23
Number of participants in basic old-age insurance for urban workers	4873.06	52.56	1468.78	92.71
Number of health institutions	86939.00	4574.00	32997.48	19.01
Number of participants in unemployment insurance	3603.43	26.75	699.66	134.71
Number of urban workers insured by basic medical insurance	4578.10	50.40	1111.45	90.84

In the dimension of cultural consumption power, except for wage income, the difference of other income is relatively large, and the difference is 12.66 times of operational income. In terms of cultural decoding ability, there is a large gap between provinces and cities in education funds and the number of types of children's books and textbooks. Among them, the difference in education funds is nearly 20 times, and the difference in the number of types of children's books and textbooks is nearly 77 times. It can be seen that there is a certain gap in the level

of educational resources provided by different provinces and cities, which will be reflected when residents choose the quality and type of cultural consumption. In the dimension of cultural consumption needs, different provinces and cities have different differences in housing prices, which is closely related to the degree of social and economic development, employment status, resource utilization and population size of each province and city. In addition to the indicators mentioned above, the difference in the values of other indicators is between 1 and 4 times.

In the dimension of cultural consumption environment, there is an obvious gap between the number of art performing institutions and the number of museums in supporting cultural facilities in different provinces and cities. In the economic environment, the added value of tertiary industry varies greatly among provinces and cities, which reflects the significant differences in the development level of market economy and the socialization degree of production among provinces and cities. There is a large gap between provinces and cities in the area of cleaning and cleaning in the natural environment, which reflects that the development of environmental sanitation in various regions is at different levels; In social security, the number of people participating in unemployment insurance, basic medical care for employees and the number of people participating in pension insurance and other indicators have a larger gap, which is partly related to the population size of each province and city, and also reflects the differences in the scope and intensity of social security provided by different provinces and cities.

## 2.3 Analysis of calculation results

### 2.3.1 Assigning weights to measurement indicators

Based on the measurement index system of urban residents' cultural consumption potential constructed above, relevant data from 2002 to 2020 are collected and assigned by entropy method. The weight assignment results of indicators are shown in Table 2-3. In the measurement system, three dimensions have an impact on cultural consumption potential, among which cultural consumption environment accounts for the largest proportion, with a weight of 0.512, followed by cultural consumption capacity and cultural consumption needs, with weights of 0.320 and 0.128 respectively.

First of all, cultural consumption capacity is an important aspect to reflect the cultural consumption potential of urban residents. On the one hand, the monetary payment ability of cultural consumption ability strongly affects cultural consumption. In recent years, no matter the development of inclusive finance, the innovation of credit types, or the change of residents' concept of cultural consumption, the core restriction of income on consumption has not been shaken. The difference degree of the cultural consumption potential of urban residents in monetary payment ability is wage income, property net income, business income and transfer net income. On the other hand, the types of children's books and textbooks, the proportion of students in higher education and the index of educational expenditure in each region have significant distinguishing effect on the cultural consumption potential.

Secondly, the index weight of cultural consumption expenditure is relatively small, and the per capita expenditure on culture, education and entertainment in urban areas has a large weight in the dimension of consumption expenditure, which has a high degree of differentiation of the cultural consumption potential of urban residents, indicating that the current consumption expenditure is still a direct reflection of the cultural consumption potential, and the importance of the cultural consumption potential is self-evident. Among the other indicators, the child dependency ratio, mobile phone, elderly dependency ratio and price index have greater weight, indicating that the family dependency ratio, the number of mobile phones and consumer price have a significant distinguishing effect on the cultural consumption potential.

Finally, in the dimension of cultural consumption environment, the weight of the number of artistic performance organizations, the number of unemployment insurance participants, the added value of the tertiary industry, the number of health institutions and the number of medical insurance participants ranked the top five, all reaching more than 0.045, and the differentiation degree was high in the calculation of cultural consumption potential. The cultural consumption environment dimension has the greatest weight, and the consumption environment provides the infrastructure and necessary guarantee for the realization of consumption activities.

Table 2-3 Weights assigned to indicators of urban residents' cultural consumption potential measurement system

Primary index	Secondary index	Specific index	Entropy method	Equal weight method
Cultural consumption ability	Monetary capacity	Wage income	0.0646	1/24
		Operating income	0.0258	1/24
		Property income	0.0555	1/24
		Transfer income	0.0181	1/24
	Cultural decoding ability	Proportion of people in higher education	0.0467	1/24
		Average years of schooling	0.0091	1/24
		Number of children's books and textbooks	0.0591	1/24
Educational expenditure by region		0.0412	1/24	
Cultural consumption needs	Consumption expenditure	Per capita expenditure on culture, education and entertainment in urban areas	0.0303	1/12
	underconsumption	Per capita consumption of culture, education and entertainment	0.0223	1/24
		Engel coefficient	0.013	1/24
	Restrictive factor	Old-age dependency ratio	0.0198	1/36
		Housing price	0.0094	1/36
		Consumer price index	0.0158	1/36
	accelerant	Child dependency ratio	0.0306	1/24
Number of mobile phones		0.0268	1/24	
Cultural consumption environment	infrastructure	Number of public library establishments	0.0291	1/36
		Number of performing arts organizations	0.0692	1/36
		Number of museum institutions	0.0381	1/36
	Economic environment	Gross regional product per capita	0.0561	1/24

		Added value of the tertiary industry	0.0545	1/24
	Natural environment	Per capita green park area	0.0203	1/24
		Clean and clean the area	0.0543	1/24
	Social security	Number of participants in basic old-age insurance for urban workers	0.0458	1/48
		Number of health institutions	0.0482	1/48
		Number of participants in unemployment insurance	0.0508	1/48
		Number of urban workers insured by basic medical insurance	0.0456	1/48

2.3.2 Analysis of measurement results

Using the calculation method mentioned in the above section, the results of the comprehensive evaluation index of urban residents' cultural consumption potential in 31 provinces and cities in China from 2002 to 2020 are obtained, as shown in Table 2-4.

Table 2-4 Comprehensive estimation results of cultural consumption potential of urban residents in China from 2002 to 2020

p r o v i n c e	20 22	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12	20 13	20 14	20 15	20 16	20 17	20 18	20 19	20 20	均 值
B e i j i n g	0.4 67 3	0.4 82 1	0.4 94 3	0.4 75 1	0.4 91 5	0.4 75 9	0.4 39 0	0.4 63 1	0.4 60 7	0.4 33 1	0.4 73 9	0.4 50 6	0.5 20 9	0.4 96 0	0.4 95 9	0.4 86 3	0.4 71 2	0.4 76 5	0.4 80 0	0.47 54
T i a n j i n	0.2 96 0	0.2 91 0	0.2 95 3	0.2 72 5	0.2 67 4	0.2 56 4	0.2 56 1	0.2 74 5	0.2 69 9	0.2 80 6	0.2 87 1	0.2 73 9	0.2 68 0	0.2 54 0	0.2 49 9	0.2 60 3	0.2 41 4	0.2 39 7	0.2 54 0	0.26 78



H e b e i	0.4 06 8	0.3 80 4	0.3 87 9	03 70 9	0.3 67 0	0.3 46 6	0.3 27 2	0.3 52 3	0.3 54 2	0.3 30 8	0.3 51 4	0.3 55 1	0.3 53 8	0.3 39 9	0.3 38 1	0.3 25 4	0.3 08 4	0.3 19 5	0.3 62 6	0.35 15
S h a n x i	0.3 33 2	0.3 36 6	0.3 34 0	0.2 98 5	0.3 02 9	0.2 70 1	0.2 49 9	0.2 66 1	0.2 59 4	0.2 50 4	0.2 70 7	0.2 44 3	0.2 59 3	0.2 58 1	0.2 54 3	0.2 51 3	0.2 42 8	0.2 37 6	0.2 45 9	0.27 19
I n n e r M o n g o l i a	0.2 92 1	0.2 88 2	0.3 15 8	0.2 87 6	0.2 95 0	0.2 80 5	0.2 63 9	0.2 82 1	0.2 81 4	0.2 80 6	0.2 86 1	0.2 78 2	0.2 83 1	0.2 77 9	0.2 75 4	0.2 66 2	0.2 61 9	0.2 63 5	0.2 63 6	0.28 02
L i a o n i n g	0.4 34 8	0.4 30 6	0.4 24 4	0.4 01 8	0.4 06 6	0.3 81 1	0.3 85 5	0.3 83 1	0.3 71 6	0.3 79 7	0.3 64 5	0.3 59 0	0.3 41 4	0.3 18 7	0.3 13 9	0.2 99 4	0.2 75 4	0.2 69 8	0.2 70 9	0.35 85
Ji L i n	0.2 83 9	0.2 84 1	0.2 75 4	0.2 59 1	0.2 62 9	0.2 35 1	0.2 52 2	0.2 67 3	0.2 64 6	0.2 48 4	0.2 78 1	0.2 60 5	0.2 46 4	0.2 28 8	0.2 33 3	0.2 22 5	0.2 02 5	0.1 84 5	0.2 02 5	0.24 70
h e i l o n g j i a n g	0.3 14 3	0.3 16 3	0.3 13 2	0.2 95 1	0.2 86 9	0.2 50 2	0.2 50 4	0.2 53 3	0.2 45 0	0.2 27 4	0.2 29 5	0.2 40 5	0.2 36 7	0.2 14 6	0.2 09 4	0.2 06 3	0.1 98 6	0.1 90 4	0.1 88 8	0.24 56

S h a n g h ai	0.5 07 7	0.5 49 4	0.5 54 9	0.5 34 3	0.5 29 8	0.4 97 1	0.4 79 2	0.4 79 5	0.4 77 3	0.4 67 9	0.4 77 2	0.4 67 6	0.4 94 6	0.4 62 5	0.4 60 0	0.4 70 6	0.4 54 7	0.4 45 8	0.4 36 7	0.48 67
Ji a n g s u	0.5 41 4	0.5 57 0	0.5 65 2	0.5 68 1	0.5 75 9	0.5 60 6	0.5 32 3	0.5 41 4	0.5 35 5	0.5 34 3	0.5 73 6	0.5 56 7	0.5 60 6	0.5 50 1	0.5 31 4	0.5 30 3	0.5 08 5	0.5 18 6	0.5 32 9	0.54 60
Z h e j i a n g	0.5 30 9	0.5 46 7	0.5 66 6	0.6 00 1	0.6 16 0	0.5 81 2	0.5 16 0	0.5 40 1	0.5 18 0	0.5 14 9	0.5 52 4	0.5 50 3	0.5 54 5	0.5 29 3	0.5 25 0	0.5 13 1	0.5 05 9	0.5 08 1	0.5 21 4	0.54 16
A n h u i	0.3 06 3	0.3 24 3	0.3 06 8	0.2 77 5	0.2 86 5	0.3 19 2	0.3 12 9	0.3 39 4	0.3 40 4	0.3 34 7	0.3 65 2	0.3 70 9	0.3 62 2	0.3 48 5	0.3 38 7	0.3 46 7	0.3 55 1	0.3 50 4	0.3 64 4	0.33 42
F u j i a n	0.3 98 8	0.3 93 7	0.3 96 7	0.3 64 3	0.3 61 7	0.3 26 2	0.3 56 3	0.3 87 6	0.3 85 4	0.3 90 1	0.3 94 7	0.4 04 7	0.3 57 6	0.3 31 5	0.3 29 0	0.3 35 0	0.3 20 1	0.3 18 0	0.3 38 2	0.36 26
Ji a n g x i	0.2 75 2	0.2 73 7	0.2 93 5	0.2 77 9	0.2 86 3	0.2 65 1	0.2 67 9	0.2 84 2	0.2 73 1	0.2 67 7	0.2 88 7	0.3 03 2	0.2 79 7	0.2 80 2	0.2 75 1	0.2 75 1	0.2 71 8	0.2 64 9	0.2 87 4	0.27 85
S h a n d o n g	0.5 25 7	0.4 94 5	0.5 31 1	0.4 91 1	0.5 24 8	0.4 82 2	0.4 55 1	0.4 85 4	0.4 80 1	0.4 64 3	0.5 21 9	0.5 38 9	0.5 13 9	0.5 14 3	0.5 01 3	0.4 99 2	0.4 84 1	0.4 87 4	0.5 17 8	0.50 07

H e n a n	0.4 42 7	0.4 38 0	0.4 33 6	0.4 00 3	0.4 12 3	0.3 87 7	0.3 35 6	0.3 81 9	0.3 68 1	0.3 71 2	0.3 79 2	0.3 85 2	0.4 03 7	0.3 88 4	0.3 86 0	0.4 00 4	0.3 96 4	0.4 05 4	0.4 26 9	0.39 70
H u b ei	0.3 96 9	0.3 91 3	0.3 80 0	0.3 48 5	0.3 66 5	0.3 37 0	0.3 17 6	0.3 30 2	0.3 18 7	0.2 99 5	0.3 29 3	0.3 34 5	0.3 35 2	0.3 24 3	0.3 16 7	0.3 22 2	0.3 21 4	0.3 13 8	0.3 18 9	0.33 70
H u n a n	0.3 75 9	0.3 67 4	0.3 71 9	0.3 43 1	0.3 50 3	0.3 20 1	0.3 02 1	0.3 18 5	0.3 21 0	0.3 09 0	0.3 35 4	0.3 39 0	0.3 33 7	0.3 27 9	0.3 32 7	0.3 33 0	0.3 29 7	0.3 27 1	0.3 41 7	0.33 58
G u a n g d o n g	0.7 56 9	0.7 47 9	0.7 60 0	0.7 25 1	0.7 07 9	0.7 09 7	0.6 93 2	0.6 74 7	0.6 68 3	0.6 42 2	0.6 79 8	0.6 70 9	0.6 25 9	0.6 11 4	0.6 09 2	0.6 11 1	0.6 01 4	0.6 02 2	0.6 25 8	0.66 97
G u a n g x i	0.3 13 9	0.2 97 8	0.3 11 4	0.2 77 4	0.2 79 9	0.2 67 5	0.2 73 9	0.2 85 8	0.2 77 4	0.2 77 0	0.2 82 8	0.2 87 3	0.2 63 0	0.2 64 6	0.2 65 3	0.2 65 8	0.2 50 8	0.2 44 6	0.2 63 3	0.27 63
H a i n n a	0.2 21 5	0.2 58 8	0.1 97 5	0.1 70 8	0.1 87 6	0.1 62 2	0.1 65 5	0.1 70 2	0.1 67 9	0.1 77 5	0.1 80 4	0.1 79 1	0.1 67 8	0.1 72 8	0.1 65 9	0.1 73 6	0.1 67 8	0.1 65 9	0.1 76 8	0.18 05
C h o n g q i n g	0.2 15 9	0.2 33 4	0.2 49 3	0.2 46 6	0.2 42 8	0.2 29 8	0.2 30 0	0.2 41 8	0.2 55 3	0.2 60 1	0.2 69 9	0.2 90 8	0.2 84 3	0.2 79 4	0.2 77 8	0.2 89 8	0.2 84 3	0.2 84 6	0.2 84 2	0.26 05

S i c h u a n	0.4 05 3	0.4 01 4	0.4 11 7	0.3 70 7	0.3 70 2	0.3 48 4	0.3 51 0	0.3 55 4	0.3 62 2	0.3 65 5	0.3 97 5	0.4 05 9	0.3 94 8	0.3 84 1	0.3 88 0	0.3 96 0	0.3 98 2	0.3 91 6	0.3 94 6	0.38 38
G u a n g z h o u	0.1 96 7	0.2 15 8	0.1 93 5	0.1 86 1	0.1 79 4	0.1 68 4	0.1 66 9	0.1 93 0	0.1 87 0	0.1 88 6	0.2 04 0	0.2 17 3	0.2 11 3	0.2 07 0	0.2 21 7	0.2 31 6	0.2 33 2	0.2 34 1	0.2 43 9	0.20 42
Y u n n a n	0.3 04 1	0.2 76 6	0.3 30 0	0.3 08 3	0.2 84 5	0.2 65 9	0.2 66 2	0.2 83 5	0.2 83 6	0.2 80 1	0.2 81 2	0.2 81 5	0.2 58 5	0.2 47 0	0.2 60 7	0.2 62 6	0.2 46 0	0.2 51 4	0.2 45 9	0.27 46
X i z a n g	0.1 65 4	0.1 68 3	0.1 53 1	0.1 32 3	0.1 19 8	0.1 20 6	0.1 17 6	0.1 15 9	0.1 27 0	0.1 29 4	0.1 31 1	0.1 25 9	0.1 28 8	0.1 47 4	0.1 40 9	0.1 49 9	0.1 50 0	0.1 50 7	0.1 63 6	0.13 88
S h a n x i	0.3 23 7	0.3 54 3	0.3 37 5	0.2 99 9	0.3 04 4	0.2 74 9	0.2 78 0	0.2 86 3	0.2 83 3	0.2 73 6	0.3 00 3	0.2 94 1	0.3 02 9	0.3 02 2	0.2 79 9	0.2 73 9	0.2 69 0	0.2 59 0	0.2 73 0	0.29 32
G a n s u	0.2 37 0	0.2 36 0	0.2 58 7	0.2 30 9	0.2 26 9	0.1 98 0	0.1 87 2	0.1 84 9	0.1 73 2	0.1 73 3	0.1 97 3	0.1 94 3	0.2 07 2	0.2 04 1	0.2 09 8	0.2 15 3	0.2 02 2	0.1 99 3	0.2 09 0	0.20 76
Q i n g h a i	0.1 42 3	0.1 75 3	0.1 62 3	0.1 62 6	0.1 52 9	0.1 37 8	0.1 32 7	0.1 34 4	0.1 27 7	0.1 28 3	0.1 34 9	0.1 33 6	0.1 37 1	0.1 35 9	0.1 46 3	0.1 49 4	0.1 43 4	0.1 46 3	0.1 45 4	0.14 36

N i n g x i a	0.1 57 8	0.1 77 0	0.1 62 8	0.1 59 0	0.1 60 3	0.1 61 3	0.1 74 7	0.1 94 0	0.1 85 1	0.1 69 7	0.1 81 3	0.1 75 8	0.1 77 0	0.1 84 5	0.1 84 1	0.1 83 0	0.1 70 4	0.1 76 8	0.1 74 3	0.17 42
X i n j i a n g	0.3 30 5	0.3 18 6	0.3 13 0	0.2 86 5	0.2 95 4	0.2 32 5	0.2 33 0	0.2 80 6	0.2 34 8	0.2 37 4	0.2 41 9	0.2 44 4	0.2 40 3	0.2 51 3	0.2 43 0	0.2 42 9	0.2 30 2	0.2 25 0	0.2 15 4	0.25 77
M e a n v a l u e	0.3 51 6	0.3 55 0	0.3 57 5	0.3 36 2	0.3 38 8	0.3 17 7	0.3 08 7	0.3 23 6	0.3 18 0	0.3 12 5	0.3 30 4	0.3 29 5	0.3 25 9	0.3 17 3	0.3 14 8	0.3 15 8	0.3 06 3	0.3 04 9	0.3 15 2	0.32 52

### 3. Influencing factors of cultural consumption potential of urban residents in China

#### 3.1 Empirical research design

##### 3.1.1 Data source and variable selection

###### 1. Data source

This paper uses the panel data of 31 provinces and cities in China from 2002 to 2020. The data came from China Statistical Yearbook and China Cultural and Related Industries Statistical Yearbook, and the data of education level were obtained by calculation.

###### 2. Variable selection

###### (1) Explained variables

In this paper, the cultural consumption potential of urban residents in 31 provinces of China from 2002 to 2020 is taken as the explained variable, and the estimated results are mainly obtained through the index system established in Chapter 2.

Table 3-1 Variable selection

variable	Subdivision variable	Variable description and measurement
Explained variable	Cultural consumption potential	Estimated value of cultural consumption potential of urban residents

Core explanatory variable	Per capita disposable income	The logarithm of per capita disposable income
Control variable	Old-age dependency ratio	The proportion of people aged 65 and above in the population aged 15-64
	Child dependency ratio	The proportion of children aged 0-14 in the population aged 15-64
	Educational level	Logarithm of {(Number of illiterates *1+ number of primary school qualifications *6+ number of secondary school qualifications *9+ number of high school and secondary school qualifications *12+ number of college and bachelor's degree qualifications *16)/total population over 6}
	Social supply level	Logarithm of Government expenditure on culture, sports and media and education
	Social security level	The logarithm of government spending on social security and employment
	Consumer price index	The logarithm of the consumer price index
	Engel coefficient	Total expenditure on food as a share of total personal consumption expenditure

### (2) Core explanatory variables

This paper takes per capita disposable income as the core explanatory variable. According to classical consumption theory, consumer consumption is largely determined by long-term income, and per capita disposable income is an important part of residents' long-term income. It reflects urban residents' monetary payment ability for cultural consumption, and determines the level, type choice and future growth possibility of residents' cultural consumption.

### (3) Control variables

There are various factors affecting the cultural consumption potential of urban residents. In this paper, with reference to existing relevant literature [5-6], elderly dependency ratio, child dependency ratio, education level, cultural supply level, social security level, consumer price index and Engel coefficient are selected as control variables.

## 3. Descriptive statistics

### 3.1.1 Measurement model setting

In this paper, the panel data of 31 provinces from 2002 to 2020 is used as the basis for empirical analysis to build a panel data model to test the impact of the changes of the above selected influencing factors on the cultural consumption potential of urban residents. The regression model is set as follows:

$$ccp_{i,t} = \alpha_0 + \alpha_1 Inc_{i,t} + \varphi X_{i,t} + \varepsilon_{i,t} \quad (3-1)$$

The subscript i represents the province and city, the subscript t represents the year, inc\_(i,t) is the core explanatory variable, and X\_(i,t) is the control variable. The meaning and information of each variable have been explained in the previous text, and will not be repeated here.  $\alpha_0$  represents the model constant term,  $\alpha_1$  and  $\varphi$  are the estimated parameters of each variable, and  $\varepsilon_{i,t}$  is the random error term satisfying the independent and equally distributed. This formula is the baseline regression model, and then the panel data regression model is further tested.

### 3.1.2 Stationarity test

At the same time, in order to reduce the influence of time series on data stationarity, logarithms of per capita disposable income, education level, social supply level, social security level and consumer price index were taken for modeling. As can be seen from Table 3-3, all variables passed the stationarity test, and then empirical analysis was conducted.

Table 3-3 stationarity test results of each variable

variable		LLC	IPS
Explained variable	Subdivision variable	-14.5465***	-5.7134***
Core explanatory variable	Cultural consumption potential	-10.3345***	-1.9190**
Control variable	Per capita disposable income	-15.6949***	-5.3741***
	Old-age dependency ratio	-14.4867***	-4.9503***
	Child dependency ratio	-17.4182***	-3.3311***
	Educational level	-10.4000***	-2.6825***
	Social supply level	-17.9385***	-8.0694***
	Social security level	-17.3342***	-10.4713***
	Consumer price index	-13.3404***	-5.0837***

### 3.2 Panel data regression analysis

#### 3.2.1 Analysis of influencing factors of cultural consumption potential

In this paper, the bidirectional fixed-effect regression model is used to analyze the full sample of 31 provinces and cities, and the regression results are shown in Table 3-4. Model (1) is the regression result containing core explanatory variables; model (2) is the regression result containing core explanatory variables, elderly dependency ratio, child dependency ratio, education level and social supply level; Model (3) adds the regression result of social security level, consumer price index and Engel coefficient on the basis of model (2). According to the regression results, it can be seen that after adding social security level, consumer price index and Engel coefficient, although the coefficient of influence of disposable income, the core explanatory variable, on the cultural consumption

potential of urban residents decreases, the influence direction does not change, and all pass the test at the significance level of 1%.

Table 3-4 Full sample regression results

Explanatory variable	model (1)	model (2)	model (3)
Per capita disposable income	0.178***	0.131***	0.112***
	(9.30)	(7.64)	(5.90)
Old-age dependency ratio		0.100*	0.149***
		(1.78)	(2.60)
Child dependency ratio		0.230***	0.213***
		(5.80)	(5.40)
Educational level		0.248***	0.221***
		(8.38)	(7.47)
Cultural supply level		0.062***	0.066***
		(8.82)	(9.20)
Social security level			0.011***
			(2.98)
Consumer price index			-0.461***
			(-3.72)
Engel coefficient			-0.123**
			(-2.29)
Constant term	-1.242***	-2.246***	-0.047
	(-7.24)	(-13.67)	(-0.08)
Observed value	589	589	589
Goodness of fit	0.434	0.587	0.608
ProvinceFE	YES	YES	YES
TimeFE	YES	YES	YES

#### 4 Research conclusions and suggestions

##### 4.1 Research Conclusion

First, cultural consumption capacity, cultural consumption needs and cultural consumption environment comprehensively reflect and evaluate the cultural consumption potential of urban residents. The results show that the cultural consumption potential of urban residents has obvious spatial and temporal pattern evolution characteristics. From the perspective of time series, the cultural consumption potential of Chinese urban residents shows a trend of fluctuation and decline from 2002 to 2020. From the regional perspective, the eastern region is at a relatively high level, the central region is slightly backward, and the western region residents are affected by the consumption environment and consumption ability, and their cultural consumption potential is difficult to activate. From the perspective of spatial layout, the spatial pattern of urban residents' cultural consumption potential changes obviously, and the provinces with higher gradient, represented by the eastern coastal and central regions of China, show a "Chuan" -shaped cluster, and there is a significant spatial dependence and agglomeration.



Second, residents' income level, elderly dependency ratio, child dependency ratio, education level, cultural supply level, social security level, consumer price index and Engel coefficient are important factors affecting the cultural consumption potential of urban residents. The income level of residents is the material basis and important condition of cultural consumption, and the ratio of old-age dependency and child dependency affect the scale and structure of cultural consumption to some extent. The education level exerts an influence on the potential of cultural consumption through the popularization and cultivation of cultural consumption concepts. In addition, external factors such as the level of cultural supply and the degree of social security, as the prerequisite for cultural consumption, determine the upper limit of cultural consumption potential from the level of supply and security. Finally, the consumer price index and Engel coefficient have a certain restriction effect on the cultural consumption potential of urban residents.

Thirdly, the influence of various factors on cultural consumption potential in different regions is heterogeneous. Among them, the income elasticity of cultural consumption potential in eastern and central regions is higher; The negative effect of the old-age dependency ratio is more prominent in the east, but it has a different degree of promoting effect in the middle and west. The child-rearing ratio and education level had a higher effect on the cultural consumption potential in the east and central regions than in the west. The level of cultural supply has a significant promoting effect in all regions. The influence of social security level on eastern region is more prominent. The consumer price index in all regions showed a significant inhibitory effect; The inhibition effect of Engel coefficient is more significant in the central region.

Fourth, there is an obvious spatial correlation and spatial dependence between the cultural consumption potential of Chinese urban residents. According to the spatial panel data model based on different spatial weight matrices, per capita disposable income, elderly dependency ratio, child dependency ratio, education level, cultural supply level and social security level have significant promoting effects on the cultural consumption potential of urban residents. The consumer price index and Engel coefficient significantly inhibit the cultural consumption potential of urban residents. In addition, per capita disposable income, elderly dependency ratio and child dependency ratio all significantly affect the cultural consumption potential, and there is a significant spatial spillover effect, that is, a significant crowding out effect on the cultural consumption potential of neighboring regions. The other variables all show a certain spatial spillover effect, which has an impact on the cultural consumption potential of urban residents in neighboring areas.

#### **4.2 Countermeasures and Suggestions**

First, narrow the income gap between residents and enhance the people's ability to pay for cultural consumption. The report to the 20th National Congress of the Communist Party of China stressed that ensuring and improving people's livelihood is the key to achieving Chinese-style modernization, and we must adhere to the principle of simultaneous growth of residents' income while economic growth and simultaneous increase of labor productivity while labor remuneration. At present, the contradiction of unbalanced and inadequate social development still exists in China. The economic regions represented by the southeast coast have developed rapidly, the affordability of residents is ahead of the whole country, and cultural consumption is transitioning to a higher level. In contrast, the level of cultural consumption in the central and western regions is still weak, and it is necessary to stimulate consumer demand from the fundamental starting point of enhancing the people's cultural consumption payment power, so as to activate the cultural consumption potential.

Second, insist on educating people with culture, cultivating culture and cultural consumption concept. At this stage, Chinese society has a tendency toward entertainment, and it needs culture to properly regulate the social atmosphere, publicize correct consumption concepts, eliminate backward cultural consumer products, and guide

residents to promote economic development with positive demand. Among them, cultural consumption represented by educational expenditure becomes the key content of cultivating culture and cultural consumption concept. On the one hand, with the continuous increase of residents' disposable income, people pay more and more attention to the development needs such as education investment; On the other hand, nowadays the pressure of life is increasing rapidly, and the extension of the years of education and the continuous investment in self-knowledge reserve are inevitable. In addition to public investment in education, the trend of all kinds of private education and training in society is growing. The government should strengthen the management of private education and training, ensure the standardization and effectiveness of education and training, so as to avoid the negative effects of improper education.

Third, strengthen cultural innovation, increase the supply of cultural consumption, and improve the level of cultural supply. It is necessary to enhance the scientific and technological innovation capacity of the cultural industry chain, promote the transformation of scientific and technological achievements in cultural consumption, and promote the integrated development of culture and science and technology. "Internet Plus" and "culture plus", as the new normal in recent years, are important driving forces to promote China's supply-side structural reform and socio-economic transformation and upgrading. To promote the high-quality development of the cultural industry, we should take science and technology as the engine and culture as the core, strengthen the application of Internet technology in all links of the cultural industry chain, and focus on cultivating emerging cultural industries such as the application of Internet technology supported by big data. At the same time, cultural creativity is integrated into urban construction to realize the organic combination of culture and living area. To shape the connotation of tourism with cultural ideas and promote the deep integration of culture and tourism. For example, advanced communication elements such as live broadcasting and VR are added to traditional culture to increase residents' sense of travel experience and willingness to consume. Improve electronic online modes such as online booking and online consumption, improve the convenience of residents' cultural consumption, and promote residents' cultural consumption willingness and consumption level.

Fourth, pay attention to consumption growth points brought about by changes in the age structure of the population. At present, the problem of "aging" in China is still severe, which has a great impact on the consumption structure. The research results show that the increase of the child population is conducive to cultural consumption. On the one hand, continue to implement the three-child policy and continue the trend of expanding cultural consumption. We should focus on the development of related cultural markets and children's cultural products and services, and fully explore children's cultural consumption needs. On the other hand, we should pay attention to the aging of the population, which means the increasing demand for old-age care facilities and services. Therefore, we should focus on developing the potential of cultural consumption of the elderly, such as nursing care for the elderly, education for the elderly, group tourism culture for the elderly, etc. We can also set variety shows targeted at the elderly as customers. Focus on the preferences of the elderly groups such as historical stories, health and other topics to promote the concept of healthy and happy elderly care. At the same time, we should also beware of false propaganda and consumption traps in the elderly culture market. It is necessary to gradually improve the supervision system of the elderly culture market and provide corresponding rights and interests protection for the elderly customer groups.

### **5 Closing remarks**

Based on the discussion of the cultural consumption status of urban residents in China, this paper comprehensively calculates the cultural consumption potential, and finally analyzes the influencing factors, so as to promote the transformation of residents' consumption from the pursuit of material to the pursuit of spirit and service, and then

promote the transition of cultural consumption to high-quality type, promote the upgrading of consumption structure, and meet the higher consumption standards of residents.

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