

Research on Regional Cultural Consumption Variability and its Influencing Factors in China in the New Era

Yuhang Liu^{1*}

¹Capital University of Economics and Business, No. 121 Zhangjia Road, Huaxiang, Fengtai District, Beijing, China

Abstract: In the new era, cultural consumption has become an important aspect of promoting economic development, and how to correctly grasp the development direction of cultural industry and the direction of consumption is the key to achieving a modern and strong country. This paper uses the cultural consumption data of 31 provinces nationwide from 2015 to 2019 to analyze the current situation of cultural consumption and analyze the differences in cultural consumption and its influencing factors among regions nationwide. The study shows that the value added of cultural industry, GDP per capita and disposable income per capita have significant positive effects on regional cultural consumption levels, the consumer price index has a significant inverse effect on regional cultural consumption levels, the education level per capita has the most significant effect on regional cultural consumption differences, and government input has less influence on regional cultural consumption levels. Therefore, in order to further improve the level of cultural consumption in China, we should focus on regions with slightly backward economy, increase the government's financial investment in cultural industry, improve the system, and at the same time, continuously improve the cultural literacy of residents and increase their income to jointly promote cultural development.

1 INTRODUCTION

The year 2021 is the centenary of the birth of the Communist Party of China. With the joint efforts of the Party and the State, the goal of building a moderately prosperous society in China has been basically achieved. This not only means that China's comprehensive strength has reached a new height, but also reflects the comprehensive leap of people's living standard and quality, and the people's demand for material and spiritual life has become higher and higher.

As China ushers in the start of the 14th Five-Year Plan, the rapid economic development and expansion of China's consumer market has undergone tremendous changes, and the biggest driver of China's economic development is consumption, and its consumption structure has been continuously optimized and improved. In recent years, the total sales of consumer goods have been increasing almost steadily, from 18.4 trillion yuan in 2011 to 44.1 trillion yuan in 2021.

Along with the gradual transition from material pursuits to spiritual pursuits, spiritual and cultural consumption has accounted for a significantly higher proportion of the overall consumption structure. Macroscopically, it is the policy support from the Party and the state as well as the expansion of the economy that has driven the upgrade of the consumption structure and increased the proportion of cultural consumption. At the micro level, this is closely related to indicators such as people's income and literacy. All signs reflect that cultural consumption has become a sign of economic growth and the constant pursuit of the people's ever-growing better life.

3186039668@qq.com*

According to international experience, when the GDP per capita does not exceed US\$1,000, people are most concerned about their basic material needs; when the GDP per capita is between US\$1,000 and US\$3,000, people's psychological and cultural needs arise; when the GDP per capita exceeds US\$3,000, people's spiritual needs will increase. Data shows that, at present, our GDP per capita has long exceeded \$10,000, but has not reached the forecast of this experience. Therefore, the development of our cultural industry has a lot of room for development, coupled with China's 5,000 years of history and profound cultural resources, improving the structure of cultural consumption is crucial to the future of China, both in terms of economy and strength.

In the new era, cultural consumption is an important aspect in promoting economic development, and correctly grasping its development trend and consumption trend is an important element in achieving a modern and strong country in the new era. Exploring the problem of cultural consumption disparity and its influencing factors in China is of great significance to promote cultural construction and development.

In this paper, we use factor analysis and cluster analysis to study the differences of different cultural consumption levels in the region, and establish a logistic regression model to further analyze the influence of each factor.

2 LITERATURE REVIEW

From the late 1950s to the early 1960s, Western scholars conducted in-depth discussions on it. At present, foreign

studies on cultural consumption mostly focus on three levels: social, economic, and psychological, and a series of fruitful theoretical systems have been formed.

(1) Cultural consumption from the social perspective

Tak Wing Chan and John H. Goldthorpe have conducted an empirical study on the relationship between cultural consumption and social status and educational level through regression analysis ^[6].

(2) Cultural consumption from an economic perspective

Marshall believed that with the development and growth of technology, leisure consciousness would become increasingly popular and thus have a significant impact on consumption patterns. Theodore W. Schultz explores the role of educational investment in promoting our economic development from a human capital perspective ^[7].

(3) Cultural consumption from a psychological perspective

Marx and Engels based on the theory of human nature, Marx saw human being as a self-conscious animal, and human being relied more on intellect and mind to change the world. Engels took conscious living and the spiritual and cultural needs based on conscious living as the most basic class of essential characteristics of human beings.

China gradually entered the category of cultural consumption economy from the mid-1980s to around 1987. Domestic scholars have analyzed and researched from different perspectives, drawing on the basic theories of cultural consumption in foreign countries and based on the actual situation in China, and have also made abundant achievements.

Feng Yi used descriptive statistics, co-integration theory and error correction to study the cultural consumption of urban residents in Beijing and the current situation of cultural consumption of urban residents in Beijing through the study ^[3]. Using the statistical data from 1993-2010, Han Haiyan conducted an empirical analysis of the relationship between cultural consumption and economic development of urban residents in China ^[4].

3 DATA AND MODEL

3.1 Data sources

Before analyzing the influencing factors of the research object, we have to identify measurable indicators reflecting its basic characteristics and classify it according to multiple indicators. The data in this paper were compiled and calculated by using the data of 31 provinces and cities from 2015 to 2019, such as China Statistical Yearbook, China Statistical Yearbook of Culture and Related Industries, and China Statistical Yearbook of Culture, Heritage and Tourism.

Based on the per capita cultural and entertainment consumption expenditure in the past five years, the average value μ was selected as the classification value, and the regions higher than or equal to the average value 824.56 were recorded as 1, and those lower than the average value 824.56 were recorded as 0, and thus the level of cultural consumption was described in a

dichotomous manner.

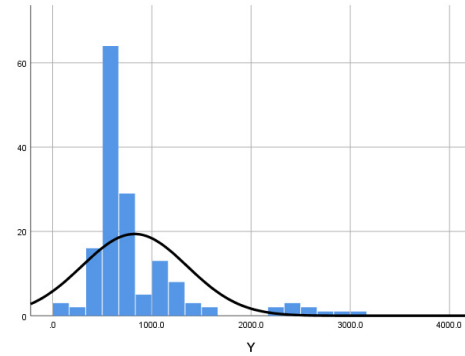


Figure 1: Distribution characteristics.

3.2 Research methods

Factor analysis is a method of dimensionality reduction and simplification of data. It seeks the basic structure of data by studying the interdependence between a large number of variables, and uses some few common factors and specific factors to express the complex structure of data relationships. The mathematical model is as follows:

$$x_1 = a_{11}F_1 + a_{12}F_2 + \dots + a_{1m}F_m + \varepsilon_1$$

$$x_2 = a_{21}F_1 + a_{22}F_2 + \dots + a_{2m}F_m + \varepsilon_2$$

⋮

$$x_p = a_{p1}F_1 + a_{p2}F_2 + \dots + a_{pm}F_m + \varepsilon_p$$

x_1, x_2, \dots, x_p are the p initial variables; F_i is called the common factor; a_{ij} is called the factor loading, representing the weight of the variable x_i dependent on F_j ; and ε_i is called the special factor, representing the part of the original variable that cannot be explained by the common factor.

Cluster analysis is a quantitative analysis method, which is a kind of categorization analysis based on the characteristics of things and the similarity between things, based on multiple indicators and multiple sources of information, using existing statistical models.

Logistic regression model is one of the most commonly used multivariate quantitative analysis methods in regression analysis of dichotomous dependent variables, i.e., it has both continuous and categorical types and can find out the weights of each factor using logistic regression analysis, and the parameters of this model are estimated based on the maximum likelihood method.

3.3 Variable selection

Following the principles of comprehensiveness, objectivity, validity, and accessibility, we select six factors: government cultural input (environmental factor), value added of cultural industry (supply factor), per capita GDP (demand factor), per capita disposable income (demand factor), consumer price index (price factor), and per capita education level (group factor), which are obtained as explanatory variables through relevant calculations. For the dependent variable cultural consumption level, we quantified it as the explanatory variable by using per capita expenditure on education, culture and entertainment.

4 EMPIRICAL ANALYSIS

4.1 Cultural consumption variability

Based on the principle that the characteristic root is greater than one, we extracted the first two factors and retained two factors, which can profile a large amount of information.

According to the factor loading matrix, factor 1 has explanatory strength for X2, X3, X4 and X6 variables, factor 2 has the strongest explanation for X1 and X5, i.e., government cultural input and consumer price index, while it has little explanation for the rest of the variables. Therefore, we summarize public factor 1 as a social factor and public factor 2 as an individual factor:

Table 1: Factor loading matrix.

Variable	Factor1	Factor2	Uniqueness
X1	0.6747	0.3537	0.4197
X2	0.8655	-0.0734	0.2456
X3	0.9480	-0.0922	0.0929
X4	0.9714	-0.0553	0.0534
X5	0.3432	0.8369	0.1817
X6	0.8079	-0.3978	0.1891

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Factor score:

$$\begin{aligned} \text{Factor1} &= 0.5340X_1 + 0.8464X_2 + 0.9306X_3 \\ &\quad + 0.9416X_4 + 0.0705X_5 + 0.8909X_6 \\ \text{Factor2} &= 0.5433X_1 + 0.1952X_2 + 0.2025X_3 \\ &\quad + 0.2448X_4 + 0.9018X_5 - 0.1312X_6 \end{aligned}$$

Combined score:

$$\begin{aligned} F &= 0.5921/0.8029 * \text{Factor2} \\ &\quad + 0.2108/0.8029\text{Factor2} \end{aligned}$$

Based on the factor scores above, we used SPSS software to cluster each region to classify the level of cultural consumption differences by region

Analysis of variance (ANOVA) on two, three and four categories showed that the greatest differences were obtained in four categories, as follows: Primary region: Shanghai, Tianjin, Beijing. Second-tier region: Guangdong, Jiangsu, Zhejiang. Tertiary region: Yunnan, Jilin, Sichuan, Anhui, Shandong, Guangxi, Jiangxi, Hebei, Henan, Hainan, Hubei, Hunan, Gansu, Tibet, Guizhou, Qinghai, Heilongjiang. Four-level regions: Inner Mongolia, Ningxia, Shanxi, Xinjiang, Fujian, Liaoning, Chongqing, and Shaanxi. From the clustering results, we can see that the level of cultural consumption is more optimistic in Beijing, Shanghai and Tianjin, which are areas with high population density and rapid and developed economic development, while it is slower for

the more economically backward third- and fourth-tier regions, and these two types of regions contain most provinces and cities, thus also indicating the reason for the relative backwardness of cultural consumption in China.

4.2 Research on factors influencing cultural consumption

In this paper, 31 provinces in China are selected as samples, and data of six indicators are selected to establish panel data between 2015 and 2019, where $i = 1, 2, \dots, k$ represent the provinces included in each region; t represents time. $x_{1,it}$ denotes government cultural input, $x_{2,it}$ denotes value added of cultural industry, $x_{3,it}$ denotes GDP per capita, $x_{4,it}$ denotes per capita disposable income, $x_{5,it}$ denotes consumer price index, $x_{6,it}$ denotes per capita educational attainment, and ε_{it} is a random disturbance term, from which we can obtain the fitted equation of the model:

$$\begin{aligned} \ln(Y_{it}) &= \beta_1 \ln(x_{1,it}) + \beta_2 \ln(x_{2,it}) + \beta_3 \ln(x_{3,it}) \\ &\quad + \beta_4 \ln(x_{4,it}) + \beta_5 \ln(x_{5,it}) \\ &\quad + \beta_6 \ln(x_{6,it}) + \varepsilon_{it} \end{aligned}$$

From the logistic regression results, the p-value of the model is 0.000 and the decidable coefficient of the model is 0.7494, indicating that the explanatory power of the model is 74.94% and the results are more acceptable. We can also see through the significance that the significance level of x_1 government cultural input is greater than 0.05 and its effect is less significant, while the significance levels of the remaining factors cultural industry value added, GDP per capita, disposable income per capita, consumer price index, and education per capita are less than 0.05 and the effect is extremely significant. From this we exclude the x_1 variable, we can obtain the fitting equation of the model: $\ln\left(\frac{pi}{1-pi}\right) = 184.0334 + 2.454733x_2 + 0.0002109x_3 + 0.0007819x_4 - 2.087259x_5 + 69.24379x_6$

Logistic regression		Number of obs = 155	
Log likelihood = -22.183746		LR chi2(6) = 132.65	Prob > chi2 = 0.0000
		Pseudo R2 = 0.7494	

p	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
X1	3.43e-06	3.81e-06	0.90	0.368	-4.04e-06 .0000109
X2	2.454733	.7316842	3.35	0.001	1.020659 .3.888808
X3	.0002109	.0000668	3.16	0.002	.0003419 .0000799
X4	.0007819	.0002376	3.29	0.001	.0003161 .0012476
X5	-2.087259	.9368391	-2.23	0.026	-3.92343 -.2510878
X6	69.24379	21.6327	3.20	0.001	26.84447 111.6431
_cons	184.0334	92.29993	1.99	0.046	3.128901 364.938

Figure 2: Logistic regression results.

5 CONCLUSIONS

In this paper, using the cultural consumption data of 31 provinces and cities from 2015 to 2019, regional cultural consumption differences were analyzed using factor analysis and clustering methods, and the influencing factors of each region were explored in depth using Logistic regression models. The following conclusions were obtained.

From the cultural consumption differences of each region, the factors influencing cultural consumption differences are: social factors and individual factors,

where social factors refer to government input and support and consumer price index of residents, and individual factors refer to residents' behaviors, needs and characteristics, including value added of cultural industry, per capita GDP, per capita disposable income and per capita education level. Cluster analysis of the factors influencing regional cultural consumption differences divides the 31 provinces in China into four major categories. The first-tier regions are characterized by dense population, rapid economic development, and very rich ethnic cultural resources; therefore, both the government and the residents pay much attention to the development of cultural industries. Level II regions are also characterized by a higher level of economic development and a higher level of concern for residents, but social factors are less important compared to Level I regions. The rest are Level 3 regions and Level 4 regions, which contain most of the provinces and cities in the country. Compared with the first two categories, these provinces and cities have a more backward economic situation, smaller population density, not very rich cultural resources, and the government's attention is not as great as that of developed regions, so the residents' needs are not very high; in addition, the classification is in line with the level of economic development. Therefore, the government should increase the financial and policy investment in the cultural industry, continue to focus on the cultural economy of developed regions, while increasing the cultural development of the rest of the regions, and strive to achieve balanced development in all regions. Government departments can strengthen the construction of cultural infrastructure by improving the construction of cultural institutions.

In terms of influencing factors, after establishing a logistic regression model, it is found that the most significant influence on the level of cultural consumption is the level of education per capita, which is the aspect of group differences of residents. Generally speaking, people with higher education tend to be more inclined to spiritual and cultural pursuits, and will spend more on cultural products to improve themselves, while people with lower education perhaps prefer more popular cultural products and will not spend a lot of money to deliberately pursue spiritual needs. Moreover, the cultural and educational levels of the first and second categories of areas are also more advanced, which is in line with the conclusion of the factor analysis model. Therefore, we should strengthen cultural propaganda, combine with the Internet, expand the information channels of cultural consumption, and integrate culture into life; increase policies and investment in education, improve personal quality and ability, train more high-tech talents, and enhance cultural consumption awareness.

Supply, environment, and demand factors all have positive effects on cultural consumption, with supply and demand having more significant effects. The richer the cultural industry or goods are, the more they can satisfy people's spiritual pursuit, while people's own economic status and income improvement will also promote the consumption of culture. The influence of environmental factors is slightly more significant, mainly because of the different degree of importance attached to the investment

in culture by government departments in each region. There are significant differences in cultural facilities, cultural venues, cultural services, etc. in different regions. In order to ensure the smooth advancement of the development of cultural industry, the government should be called upon to increase the funds and measures invested in culture. There are differences in the factors influencing cultural consumption among 31 provinces in China. In addition to the above influencing factors, there are also factors such as age, social status, and interest, so in practice, it is necessary to consider the influence of all aspects and take corresponding countermeasures.

Therefore, in order to further improve the level of cultural consumption in China, we should focus on the regions with slightly backward economy, increase the government's financial investment in cultural industry and improve the system, meanwhile, continuously improve the cultural literacy of residents and increase their income to jointly promote cultural development. At the same time, we should strengthen cultural propaganda, combine with the Internet, expand the information channels of cultural consumption, and integrate culture into life; increase the policy and investment in education, improve the quality and ability of individuals, cultivate more high-tech talents, and enhance the awareness of cultural consumption.

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