

Factor Analysis of Consumption Structure of Urban Residents in Different Regions of China

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Abstract

This paper uses factor analysis method to analyze the consumption structure of urban residents in various regions of China, and uses the data of China Statistics 2017 statistical yearbook to explore the main factors affecting the consumption structure of urban residents from the structure and distribution, and puts forward the countermeasures to balance the consumption level of urban residents, improve the consumption structure of urban residents, and improve the consumption level of urban residents Put forward reasonable suggestions beneficial to economic development and guide residents' healthy consumption scientifically.

Keywords

Factor analysis, consumption structure, urban residents.

1. INTRODUCTION

Although China's economy has been maintaining a high speed of development, the main factor restricting its development is still insufficient internal demand. Under the specific background of unsustainable export-oriented mode and unsustainable investment led mode, the main direction of China's economic development is to expand residents' consumption and build a big consumption country. This is a consensus reached by economists and even the whole society. The consumption structure refers to the proportion of different types of consumption in the total consumption expenditure in the process of residents' living consumption (including the expenditure on consumer goods and services) and the relationship among them in terms of coordination, substitution and restriction. It is not only manifested in the structure of various kinds of consumption materials (including products and services) consumed by residents in a certain period of time, but also the monetary expenditure structure of all kinds of consumption in the market within a certain period of time. The consumption structure of residents directly affects the production structure of consumer goods, and then the production structure of means of production. With the rapid development of China's economy, the income of urban residents has increased by a large margin, and the consumption structure of urban residents is also undergoing profound changes, which play an important role in economic development.

2. METHODOLOGY

2.1. Purpose and Significance of the Experiment

Studying the consumption structure of residents, analyzing the changing trend and law of consumption structure, and mastering the hot spots and development direction of residents' consumption demand are conducive to scientific and reasonable guidance and expansion of consumption, so as to promote the healthy and sustainable growth of national economy. At the same time, how to guide the residents to carry out healthy consumption and realize the rationalization of consumption structure has a positive impact on the adjustment of industrial

structure, the adjustment of the contradiction between supply and demand and the promotion of sound and rapid economic development.

Therefore, I use the factor analysis method to analyze the consumption structure of urban residents in various regions of China, and use the data of China Statistics 2018 statistical yearbook to explore the main factors affecting the consumption structure of urban residents from the structure and distribution, and put forward countermeasures to balance the consumption level of urban residents, improve the consumption structure of urban residents and improve the consumption level of urban residents. At the same time, it puts forward reasonable suggestions beneficial to economic development, and scientifically guides residents' healthy consumption.

2.2. Selection of Experimental Variables

Consumption structure is an objective existence, and the classification of consumption structure is the subjective product of people. People can classify the consumption structure according to the actual needs. From its definition, residents' consumption structure refers to the proportion of residents' various consumption expenditures in total consumption expenditure under certain social and economic conditions. It can not only reflect the specific content of residents' consumption, but also reflect the satisfaction of residents' consumption demand. According to the commonly used classification of consumption expenditure in China, the living expenses of Chinese residents are divided into eight parts: food, clothing, household equipment, health care, transportation and communication, culture, education and entertainment, residence and other eight parts.

Therefore, I designed eight variables, namely food, expressed as X1; clothing, expressed as X2; residential, expressed as X3; household equipment and supplies, expressed as X4; transportation and communication, expressed as X5; culture, education and entertainment, expressed as X6; medical care, expressed as X7, and others, expressed as X8.

Considering that the indicators are not independent, this paper uses factor analysis method to make an empirical analysis of 8 index data of urban residents' consumption expenditure in 31 regions of China. The factor analysis method is used to find the internal relationship between the data. Multiple indicators are condensed into a few factors, and the extracted main factors reflect the characteristics of consumption quality of urban residents in various regions. This paper uses factor analysis method to analyze the consumption structure of 31 regions in China.

2.3. Experimental Process

Test the suitability of factor analysis. In order to verify that the eight indicators we selected have strong correlation, so as to be suitable for factor analysis, we first select kmo and Bartlett test on the data. The kmo value greater than 0.5 and close to 1 indicates that it is suitable for factor analysis. From the table, kmo value of 0.833 indicates that it is suitable for factor analysis. The original hypothesis of Bartlett's sphericity test is that the correlation coefficient matrix is the unit matrix. The sig value of 0.000 is far less than the significance level of 0.05, so the original hypothesis is rejected, indicating that there is a correlation between variables, which is suitable for factor analysis.

2.4. Explanation of Economic Significance of Main Factors

The eigenvalue, variance contribution rate and cumulative variance contribution rate of correlation coefficient matrix can be calculated by factor analysis. The results are as follows,

Table 1. Experimental data of total variance of interpretation

component	Initial eigenvalue			Extract sum of squares		
	total	Variance ratio	Cumulative ratio	total	Variance ratio	Cumulative ratio
1	5.502	68.781	68.781	5.502	68.781	68.781
2	1.193	14.911	83.691	1.193	14.911	83.691
3	0.473	5.914	89.605			
4	0.257	3.216	92.822			
5	0.237	2.964	95.785			
6	0.178	2.225	98.010			
7	0.091	1.137	99.147			
8	0.068	0.853	100.00			

Combined with the above table, it is easy to see that the first two factors are the most suitable as the main factors. In the table above, the cumulative contribution rate of the first two factors is 83.691%. In the gravel map, we also find that the absolute value of the eigenvalue between factor 1 and factor 2 is larger, while the difference between other factors is small. Therefore, we should choose the first two factors as the main factors. The factor load matrix is rotated, and the factor load matrix and factor score coefficient matrix after rotation are shown in the table below.

Table 2. Rotating component matrix

variable	component	
	1	2
1	0.889	0.084
2	0.187	0.910
3	0.819	0.281
4	0.836	0.336
5	0.915	0.243
6	0.914	0.222
7	0.250	0.871
8	0.770	0.528

Factor score coefficient matrix after rotation are shown in the table below.

Table 3. Component score coefficient matrix

variable	component	
	1	2
1	0.271	-0.187
2	-0.189	0.576
3	0.194	-0.32
4	0.184	0.001
5	0.236	-0.084
6	0.241	-0.099
7	-0.157	0.531
8	0.110	0.152

It can be seen that the first common factor has a large load on the six indicators of food, household equipment, transportation and communication, culture, education and entertainment, residence and other indicators. It shows that the first common factor comprehensively reflects the changes in these aspects. These six aspects can be said to be closely related to the daily life of residents. Therefore, the first common factor can be named as basic life Consumption factor, which represents the consumption state of most residents. According to the absolute value of load coefficient, the largest proportion of consumption structure in 2013 is food, transportation and communication, culture, education and entertainment. Compared with China's economic development, we can find that these aspects are indeed the focus of our attention, which can best reflect our basic living conditions and consumption structure in the past year. Combined with the popularity of national high-speed transportation network and communication network, the rise of food prices, energy prices, housing and other factors, the rise of service education industry and other factors are also consistent with our analysis results.

The second common factor has larger load coefficient in clothing, medical care and other aspects, which represents the consumption situation in these aspects. Compared with the above items, these factors are not highly related to residents' life. Therefore, we can name it service consumption factor. The health care awareness of urban residents has been significantly improved, and the residents' awareness of enjoying services has become increasingly strong. Generally speaking, the development of these three aspects is similar. Through the second common factor, we can get the secondary factors that affect the consumption structure of residents.

Combined with the factor score of each region and the economic significance of our common factor, we can roughly divide the consumption structure of 31 samples from different regions into three categories according to the score ranking. The first category is Shanghai, Guangdong, Beijing and Zhejiang, which have four highly developed provinces and cities with a comprehensive factor score of more than 10; the second category is Tianjin, Fujian, Jiangsu and Zhejiang Hainan and Chongqing are five economically developed areas; the third category is Hunan, Guangxi, Sichuan, Liaoning, Shandong and other 13 general economic areas; the fourth category is Xinjiang, Anhui, Tibet, Inner Mongolia and other nine economically backward areas. According to our factor economic interpretation, the higher the score, the more reasonable the consumption structure.

We can draw a preliminary conclusion that the consumption structure of urban residents is closely related to the economic situation of their areas. The more developed the economy is, the more reasonable the consumption structure of residents is. If the economy is underdeveloped, the consumption structure of residents is not very reasonable.

3. CONCLUSION

Based on the data of residents' consumption expenditure in China's 2017 statistical yearbook, this paper first verifies the feasibility of factor analysis of various indicators through the spherical software, and on this basis, it conducts factor analysis, obtains many results in line with the actual situation, and makes a reasonable economic explanation. Here, it makes the following conclusions on China's residents' consumption structure:

1. The consumption level is upgraded in an all-round way, and the consumption expenditure structure is transferred to the multi-level consumption structure. From the perspective of the development of consumption, people can only pay attention to the enjoyment and development of material consumption only when they meet the basic material needs. On the whole, the consumption structure of residents has shifted from a single type in the past to a multi-level consumption structure with equal emphasis on survival, development and enjoyment.

Therefore, it is necessary to provide the material basis for optimizing the consumption structure. Optimize the industrial structure, so that there are more goods in the market that can adapt to the consumption of different levels of residents.

2. Traffic communication, culture, education and entertainment increased significantly. At present, the consumption of Chinese residents in material life has been generally satisfied. People have begun to pay attention to the development and enjoyment of material consumption, and pay more attention to their own health, knowledge level and other aspects of the cultivation of the main quality of consumption. Due to the influence of the increase of income, the change of life concept and the system reform, the transportation, communication, culture, education and entertainment occupy the second and third place. Therefore, we need to vigorously support the development of these industries to meet the growing consumer demand of Chinese residents. We should reduce the imbalance of economic and industrial development, and gradually build a healthy and sound industrial chain around colleges and universities.

3. The difference of regional economy leads to the imbalance of consumption structure. We should reduce the imbalance of economic and industrial development in various regions. The leading role of the eastern region should be highlighted. Taking the eastern region as the main area to develop the consumption market, we should focus on cultivating high-level consumption hot spots and improving the consumption level. Lay the consumption foundation for the central and western regions. Efforts should be made to improve the conditions of consumption infrastructure, solve the bottleneck factors restricting the consumption of urban residents, expand the consumption market of residents, improve the consumption mode of residents, and guide the consumption concept beneficial to economic development. References.

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