Inter-Provincial Comparative Research on Volk Area Fiscal Expenditure Structure Based on Correspondence Analysis

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Abstract. The author chooses our country volk area fiscal structure as studying object, leading in correspondence analysis method of multi-parameter statistical analysis, choosing year 2013 section data, analyzing inter-provincial Volk Area Fiscal Expenditure Structure by using SPSS18.0, finding that our country Volk Area Fiscal Expenditure Structure has the following feature—clear category, outstanding characteristic, in accordance with the real situation of each volk area, hereby suggesting different volk areas make up shortages by using the others’ advantages, using references within each other, using each other’s experiences.

Introduction
Finance resource is important material basis for government performing functions, fiscal expenditure is important policy tool, it takes very important adjusting role in economy society development. Fiscal expenditure structure refers to the portions that different fiscal expenditure occupy in the total fiscal expenditure, directly indicating government resource configure direction and portion, directly influencing the efficiency of economy society development. In our country, folk areas take very special role in the whole country’s economy society development, relating to the stability of the hole country’s economy society development. Our country exercises folk area autonomy policy, fiscal expenditure exercises important tools of volk area autonomy policy, volk area fiscal expenditure structure directly influences the efficiency of volk area economy society development, further more influencing the efficiency of the whole country’s economy society development. Therefore, it is very important to research the volk area fiscal expenditure structure.

Generally speaking, there are a great deal of research literature on fiscal in home and aboard, many scholars such as Aschauer [1], Barro [2], Tsui Kai–yuen [3], Devarajan [4], Yu Qing [5], Antonio Afonso [6], Gong liutang [7], Wang Chunyan [8], Guo Qingwang [9], Zhang Gang [10], Zhu Yuchun [11], Zhang Minxi [12], Chen Shiyi [13], etc. have researched relatively deeply in different aspects. However, there is little literature on our country volk area fiscal expenditure structure, there is even fewer literature on our country volk area fiscal expenditure comparison research. Thus, this research chooses our country volk area fiscal as research object, from the comparison analysis angle of review, leading into correspondence analysis method of the multi-parameter analysis, analyzing the fiscal expenditure structure of our country 11 volk areas in 2011.

Variables Choosing and Comparison Method Explanation

Variables Choosing Explanation
The search chooses three variables which are volk area, fiscal expenditure category and government expenditure structure portion as studying variables, among which volk area, fiscal expenditure category are nominal variables, government expenditure structure portion is ruler variable. In the
choosing volk area variables, the 11 areas such as Inner Mongolia 1, Guangxi 2, Chongqing 3, Sichuan 4, Guizhou 5, Yunnan 6, Tibet 7, Gansu 8, Qinghai 9, Ningxia 10, Xinjiang, 11 are chosen as volk area category studying variables. In the chosen fiscal expenditure category variables, the research considers that the fiscal expenditure in the statistic year book includes 22 detailed items, which is too detailed to use for data analysis, therefore the search draw on the experience of views from Chen Zhiyong, Zhang Mingxi, choosing government running expenditure 1, public welfare career expenditure 2, understructure expenditure 3, adjustment distribution expenditure 4, the above four fiscal expenditure categories as fiscal expenditure category studying variables, category synthesizing the fiscal expenditure statistics data in the statistics year book. In the choosing fiscal expenditure structure variables, the research chooses the portion that government running expenditure occupies fiscal expenditure X, the portion that public welfare career expenditure occupies fiscal expenditure X, the portion that under structure occupies fiscal expenditure X, and the portion that adjustment distribution expenditure occupies fiscal expenditure X as the studying variables of fiscal expenditure structure portion.

**Comparison Method Explanation**

The research chooses correspondence analysis method of multi-parameter statistics analysis as comparison method. Correspondence analysis is also called R-Q factors analysis, which is a multi-parameter statistics method developed based on R Factor and Q Factor analysis[14].The method was firstly proposed by a France statistics scientist Beozecri, one of the aim is when describing the relation between two variables at the same time, describing the relation between two nominal variables in low dimension space, the distance between two category points in the picture reflects the relation between the different categories which have the similar category pictures in neighbor, the projection point that one variable projects from original point to the other variable category point vector describes the relation between variables. This method can unify the R factors and Q factors analysis, directly reflecting the relation between studying indexes, relation between samples, and correspondence relations between indexes and samples.

Most of the previous researches use R Factor or Q Factor analysis, either analyze only area distribution, or analyze only fiscal expenditure category, thus can not accurately reflect the relation between area distribution and fiscal expenditure category. The research considers the above fiscal involving many areas and indexes, choosing correspondence analysis method as comparison method, expecting combing area distribution and fiscal expenditure structure, synthetically analyzing the correspondence relation between volk area samples and each measuring indexes.

**Data source and Analysis Process**

**Data Source Explanation**

The research chooses year 2011 our country 11 volk areas finance government expenditure structure data as sample data, all original data coming from China Statistics Year Book 2012. Among them each volk area government running expenditure 1 includes general public service expenditure, diplomacy expenditure, national defense expenditure, public security expenditure, urban and rural community affairs expenditure, finance supervising, etc. affairs expenditure, grain and oils store management affairs and national debt these 8 detailed items of statistics data, each volk area welfare career expenditure 2 includes education expenditure, science technology expenditure, culture sports activities and media expenditure, medical treatment health expenditure, energy saving expenditure, national land source atmosphere affairs expenditure these 6 detailed items of statistics data, each volk area understructure expenditure 3 includes agriculture forestry water affairs expenditure, traffic transportation expenditure, resource exploration power information etc. affairs expenditure, business service affairs expenditure, after-earthquake recovering and rebuilding expenditure these 5 detailed items of statistics data, each volk area adjustment distribution 4 includes society guarantee and employment expenditure, housing guarantee expenditure, other expenditure these 3 detailed items of
Table 1. Year 2011 our country 11 volk area fiscal expenditure structure data.

<table>
<thead>
<tr>
<th>Volk area</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Mongolia</td>
<td>0.277849331</td>
<td>0.281034119</td>
<td>0.257599834</td>
<td>0.183510024</td>
</tr>
<tr>
<td>Guanxi</td>
<td>0.244770713</td>
<td>0.33351537</td>
<td>0.265723221</td>
<td>0.155994625</td>
</tr>
<tr>
<td>Chong Qing</td>
<td>0.304901488</td>
<td>0.258119864</td>
<td>0.238569161</td>
<td>0.198409487</td>
</tr>
<tr>
<td>Si Chuan</td>
<td>0.231783645</td>
<td>0.291726917</td>
<td>0.270400349</td>
<td>0.206086949</td>
</tr>
<tr>
<td>Gui Zhou</td>
<td>0.229523428</td>
<td>0.309095759</td>
<td>0.292798079</td>
<td>0.168578288</td>
</tr>
<tr>
<td>Yun Nan</td>
<td>0.220494265</td>
<td>0.317818132</td>
<td>0.262875478</td>
<td>0.198812125</td>
</tr>
<tr>
<td>Tibet</td>
<td>0.229135614</td>
<td>0.207964543</td>
<td>0.342443709</td>
<td>0.220482516</td>
</tr>
<tr>
<td>Gan Su</td>
<td>0.191766597</td>
<td>0.334879748</td>
<td>0.252115853</td>
<td>0.221237802</td>
</tr>
<tr>
<td>Qing Hai</td>
<td>0.154082297</td>
<td>0.262033965</td>
<td>0.299430473</td>
<td>0.284463601</td>
</tr>
<tr>
<td>Ning Xia</td>
<td>0.263886331</td>
<td>0.295023445</td>
<td>0.2697936</td>
<td>0.171324956</td>
</tr>
<tr>
<td>Xin Jiang</td>
<td>0.250344716</td>
<td>0.304264847</td>
<td>0.25305867</td>
<td>0.192331768</td>
</tr>
</tbody>
</table>

Remark: All original data comes from China Statistics Year Book 2012, the data in the table are calculated from the original data according to variables definition.

**Analysis Process Explanation**

The analysis process is completed under the statistics analysis software SPSS18.0, including 3 basic steps: first, variable assignment in SPSS18.0, inputting sample data, second, using Correspondence Analysis of the module of Data Reduction analysis; third, choosing the modality of variables and results to be analyzed and running.

According to the above steps, running the function of Correspondence Analysis in the module of Data Reduction, the result’s accuracy become in accordance with the system default requirement after 20 times of iterations. The running results mainly contain correspondence analysis results main content list and correspondence analysis chart, in which correspondence analysis results main content list is a summary list for the whole analysis result, and is the most important of the output results, mainly to confirm using how many dimensions to explain the results. Correspondence analysis chart is a chart to directly describe the relation between variables; it is the main result of the correspondence analysis, mainly used for describing the mutual relation between variables in low dimension space.

As shown in Chart 1, the variable points and sample points in the chart can be classified according to the rules of variable points and sample points concentrating rule, the 4 variable points of government running expenditure, public welfare career expenditure, understructure expenditure and adjust distribution expenditure, and our country volk area 11 sample points are classified in 4 categories. Among them, the first category: the variable points contain government running expenditure 1 variable point, sample points contain Chongqing, Inner Mongolia and Ningxia 3 volk areas; the second category: variable points contain understructure and adjustment distribution expenditure 2 variable points, sample points contain Tibet 1 volk area; the third category: variable points contain welfare career expenditure 1 variable point, variable points contain Xinjiang, Guizhou, Yunnan, Guangxi 4 volk areas; the fourth category: this category does not contain variable points, sample points contain Sichuan, Gansu, Qinghai 3 volk areas.
Brief Conclusion and Policy Suggestion

According to the above correspondence analysis result, the research believes, all the country’s 11 volk area fiscal expenditure structures have the following feature—clear category, outstanding characteristic, in accordance with the real situation of each volk area, hereby suggesting different volk areas making up shortages by using the others’ advantages, using references within each other, using each other’s experiences.

For Chongqing, Inner Mongolia and Ningxia these 3 volk areas, the ratio that government running expenditure occupies the total fiscal expenditure is the most biggest, understructure expenditure, adjustment distribution expenditure and welfare career expenditure occupying portions are relatively low, showing that the government running costs of the 3 volk area are relatively high, and can cut off government running costs, increase understructure expenditure, adjustment distribution expenditure and public welfare career expenditure, comparatively with other volk areas.

For Tibet this volk area, the ratio that understructure and adjustment distribution expenditure occupies the total fiscal expenditure are both the most biggest, public welfare expenditure is relatively low, and government running expenditure is comparatively low, showing that Tibet volk area take very importance on understructure and adjustment distribution, public welfare is comparatively behind, government running cost is relatively low, we can learn from other volk areas’ good experience of construction on understructure, adjustment distribution and public welfare career, enhancing understructure, improving people’s livelihood, putting-forward public welfare career, other volk areas may learn from its experience of controlling government running costs, reducing government expenditure, enhancing the efficiency of government.

For Guangxi, Guizhou, Yunnan, Xinjiang these 4 volk areas, the ratio that the public welfare career expenditure occupies the total fiscal expenditure is the most biggest, government running expenditure, understructure expenditure and adjustment distribution expenditure occupying portions are comparatively low, showing that the 3 volk areas invest comparatively much in public welfare, taking great importance on public welfare career development, other volk areas may learn from its experience of the 4 volk areas’ public welfare career development, increasing the ratio that public welfare career occupies fiscal expenditure, the successful experiences of the 4 volk areas on controlling government running costs, understructure input, adjustment distribution are also can be learned by other volk areas.

For Sichuan, Gansu, Qinghai these 3 volk areas, the expenditures on government running, public welfare career, understructure and adjustment distribution are approaching, every aspect of input is taken as importance. Why? One reasonable explanation is that because Sichuan, Gansu, Qinghai are destroyed by the earthquake, all aspects of input pressure and expenditure load for after-earthquake rebuilding are heavy, on one side, the 3 volk areas should optimize the limited fiscal resource figuration, speeding-up after-earthquake rebuilding, putting-forward local economy society stably continually developing, on the other hand, the central government should increase the input on the 3 volk areas’ after-earthquake rebuilding, reducing their pressure of fiscal input and fiscal expenditure, promoting the harmonizing development of the 3 volk areas’ economy society.

References


