Comprehensive Evaluation of Social Security in Anhui Province

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Abstract

According to the specific situation of China's social security, taking Anhui Province as the main body of research, this paper uses SPSS software to conduct an empirical analysis of the relevant data in 2018, and found that the three public factors that measure the social security level of Anhui Province. The three public factors are pensions and medical security factors, education and housing security factors, and life security factors. According to the three public factors, and we put forward suggestions to improve the social security level of Anhui Province.

Keywords

Social Security; Factor Analysis; Comprehensive Evaluation.

1. Introduction

1.1. Research Background

Social security is a type of assistance provided by the government for the people to live a normal life when members of society encounter various risks. It is a powerful system for China's current poverty alleviation efforts, and social security is also an important part of the country's "six batches" key poverty alleviation projects. This plays a crucial role in achieving a moderately prosperous society in all respects. There are certain differences in the designation and implementation of social security policies among different provinces, and the results of implementing social security systems also vary. This article will focus on Anhui Province and use reasonable indicators to quantify the operation of the social security system in Anhui Province.

1.2. Research Significance

As one of the representative provinces in the Delta region, the development level of social security in Anhui Province is of great significance. This study can enrich the research on comprehensive evaluation of social security in specific provinces. Currently, there are many scholars studying the overall level of social security in China, and some scholars studying regional differences in social security levels. However, there is little research on comprehensive evaluation of social security in specific provinces, especially in Anhui Province; This article conducts an in-depth analysis of the current social security situation in Anhui Province by consulting relevant materials and analyzing relevant data, and presents it intuitively. This is beneficial for the government and the public to have a more convenient understanding of the current social security level in Anhui Province, laying the foundation for further research and policy optimization, and providing data and theoretical support; This article conducts an empirical study on the social security level in Anhui Province, analyzing the differences in the development of social security levels among various prefecture level cities in Anhui Province. It will help to understand the current status of social security levels in various prefecture level cities and facilitate further development in the future.

2. Empirical Analysis of the Social Security Level in Anhui Province

2.1. Selection of Evaluation Indicators

The selection of evaluation indicators for social security level varies among different scholars. This article mainly draws on the evaluation indicator system of Zhou Ming and Zhang Xinwu (2014), and combines the actual situation of various regions in Anhui Province to form 5 first level indicators, divided into 11 second level indicators for the evaluation of social security level in Anhui Province. The specific indicators are shown in Table 3. Because social security expenditure includes social insurance expenditure and financial security expenditure, social insurance expenditure mainly includes insurance expenditure at four levels: elderly care, unemployment, medical care, and childbirth. Financial security expenditure mainly includes financial expenditure on social security and employment, medical care and family planning, and housing security. Therefore, this article selects these seven variables to measure the level of social security; Because the minimum living guarantee, the number of beds in medical institutions, and the dependency ratio of the elderly are related to life, medical care, and elderly care, the per capita minimum living guarantee, the number of beds in medical and health institutions per 10000 people, and the dependency ratio of the elderly are selected as additional indicators to measure the level of social security.

2.2. Evaluation Methods and Data Selection

According to the Anhui Provincial Statistical Yearbook, this article selects data from 16 regions in Anhui Province in 2018, and uses factor analysis to summarize and organize the above 12 indicators to obtain public factors. Then, the public factor scores and comprehensive scores of each region's social security level are obtained, and cluster analysis is conducted based on the scores to obtain several types of social security areas. This article mainly uses SPSS software for empirical analysis.

2.3. Analysis of Empirical Results

Using SPSS software, data from 16 regions in Anhui Province in 2018 were tested and Table 4 was obtained. According to Table 1, the KMO test has a value of 0.683>0.5, and the Bartlett test has a P<0.005. Therefore, the data selected in this article can be subjected to factor analysis.

Table 1. Bartlett sphericity test results and KMO test results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.683
Bartlett's Test of Sphericity	Approx. Chi-Square	174.666
	df	55
	Sig.	.000

This article uses SPSS software to conduct factor analysis on standardized data. The selection of the number of common factors is analyzed using the default indicator of SPSS, and Table 2 is obtained. Based on this, the gravel Figure 1 is obtained. It can be concluded that the gravel chart gradually becomes stable after the third factor, so taking three common factors is the most suitable choice.

Table 2. Variance contribution rate

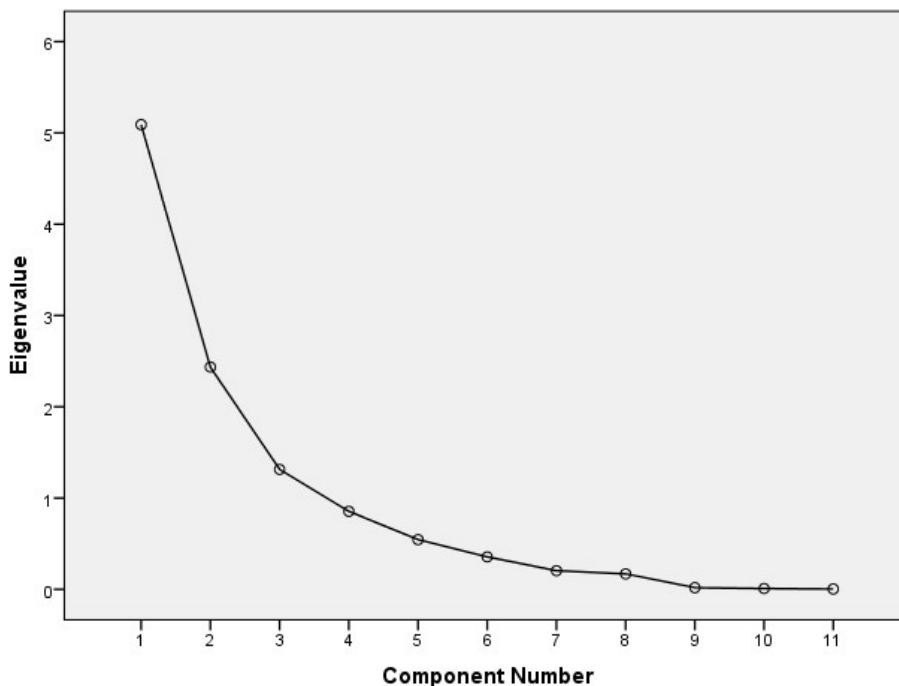| Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.090	46.276	46.276	4.597	41.791	41.791
2	2.435	22.138	68.414	2.870	26.092	67.883
3	1.314	11.946	80.360	1.372	12.477	80.360

Figure 1. Gravel Map

Then obtain the coefficients of three common factors, as shown in Table 3. From Table 3, it can be seen that the three common factors are represented by F1, F2, and F3 respectively. Specifically, F1 mainly explains X1 pension insurance expenditure, X2 unemployment insurance expenditure, X4 maternity insurance expenditure, X5 education fiscal expenditure, X6 social security and employment fiscal expenditure, X7 medical and family planning fiscal expenditure, and X8 housing security fiscal expenditure. This indicates that F1 represents the basic security factor and has more explanatory variables; F2 mainly explains X9- per capita minimum living security, X10- number of beds in medical and health institutions per 10000 people, indicating that F2 represents a living security factor; F3 mainly explains X3 medical insurance expenditure and X11 elderly dependency ratio, indicating that F3 represents a medical security factor.

Table 3. Factor Load Matrix after Rotation

	Component		
	1	2	3
X1	.960	.181	.102
X2	.695	.510	-.038
X3	.193	-.217	.715
X4	.576	.546	.262
X5	.974	-.142	.061
X6	.958	-.239	-.010
X7	.876	-.439	.041
X8	.679	-.502	-.170
X9	.085	.872	.283
X10	.308	.717	-.415
X11	-.345	.005	.661

From Table 3, it can be seen that the three common factors are represented by F1, F2, and F3, respectively. The linear combination of the three common factors is as follows:

F1=0.960*X1+0.695*X2+0.193*X3+0.576*X4+0.974*X5+0.958*X6+0.876*X7+0.679*X8+0.085*X9+0.308*X10-0.345*X11;

F2=0.181*X1+0.510*X2-0.217*X3+0.546*X4-0.142*X5-0.239*X6-0.439*X7-0.502*X8+0.872*X9+0.717*X10+0.005*X11;

F3=0.102*X1-0.038*X2+0.715*X3+0.262*X4+0.061*X5-0.010*X6+0.041*X7-0.170*X8+0.283*X9-0.415*X10+0.661*X11.

By weighting the scores of F1, F2, and F3, the total score F for each region of Anhui Province can be obtained.

F=(41.791/80.360)*F1+(26.092/80.360)*F2+(12.477/80.360)*F3

According to F1, F2, F3, F, the scores and rankings of various regions in Anhui Province can be obtained, as shown in Table 4. According to Table 8, the top three cities in the total social security level of various regions in Anhui Province in 2018 were Wuhu City, Hefei City, and Fuyang City; In terms of basic security factors, Hefei, Fuyang, and Suzhou have relatively high levels of security; In terms of living security factors, Hefei City, Wuhu City, and Bengbu City have a relatively high level of security; In terms of medical security factors, Chuzhou City, Lu'an City, and Ma'anshan City have a relatively high level of security.

Table 4. Scores and Rankings of Various Regions in Anhui Province

2018	F1	F2	F3	F	rank
Hefei	1.99698	2.06618	-0.93143	1.2641668	1
Wuhu	0.0757	1.8317	0.37523	0.5530636	2
Fuyang	1.80917	-0.60488	-0.89173	0.495575	3
Chuzhou	0.11576	0.0778	2.44494	0.36224	4
Luan	0.71562	-0.69206	1.58263	0.3105404	5
Anqing	0.34764	-0.42661	0.8714	0.1396582	6
Suzhou	0.95459	-1.55275	-0.40076	-0.0508784	7
Bengbu	-0.52532	0.6222	-0.30531	-0.0954996	8
Maanshan	-0.81402	0.52931	0.88611	-0.0979346	9
Huainan	-0.36703	0.27479	-0.45866	-0.1377464	10
Bozhou	0.46491	-1.50771	-0.48797	-0.2552988	11
Xuancheng	-0.56385	-0.06882	-0.3142	-0.2924142	12
Huaibei	-0.78192	-0.01191	-0.18092	-0.3532134	13
Tongling	-1.30458	0.46217	-0.34712	-0.4694138	14
Huangshan	-1.06265	-0.1851	-1.43021	-0.6660642	15
Chizhou	-1.06099	-0.81431	-0.412	-0.7067764	16

3. Conclusion and Suggestions

China has always emphasized the implementation and improvement of social security, and the level of social security is related to China's development and the practical interests of the Chinese people. This article starts from Anhui Province and explores the specific situation of

the overall and inter regional social security level in Anhui Province.This article selects SPSS software for empirical analysis of relevant data in 2018, and finds that the three common factors that measure the social security level in Anhui Province are basic security factor, life security factor, and medical security factor; Based on the research in this article, feasible suggestions are proposed to improve the social security level in various regions of Anhui Province. Firstly, each region should choose suitable methods based on its own actual situation to further improve its social security level. For example, areas with good social security levels should focus on strengthening their own security in terms of daily life. Only by adapting to local conditions can they achieve results; Finally, with the provincial capital cities as the axis and the eastern and southeastern cities as the support, we will drive cities with backward social security levels and promote coordinated development of social security levels in various regions. Hefei, as the provincial capital, has a good economic development, but still faces some problems. Suzhou, Bozhou, Chizhou and Xuancheng are relatively backward in economic development, lack of Urban Carrying Capacity, and need to further improve the level of social security. Therefore, in the process of social security development, Anhui Province should pay attention to publicizing the development experience of the advantageous areas, drive the backward development by advancing, and help the backward by advancing.

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