Research on the Measurement of Social Public Resources Network Sharing

Huan Wang, Shengzhu Li

School of economics and management, Chongqing University of Posts and Telecommunications, Chongqing 400065, China

Abstract

This paper uses principal component analysis to analyze for the first time the evaluation indicators of the social and public resources' networked and shared power from three aspects: networked infrastructure, shared channels, and shared environment. It quantitatively measures them and proposes corresponding countermeasures for one step. Suggest. The research shows that the provinces with the highest rankings in the measurement of social and public resource network sharing from 2012 to 2016 are mainly the eastern provinces, and the provinces with the lower rankings are basically the provinces in the southwest and northwest, and the three provinces in the east are also ranked in the middle and lower reaches. Vigorously promote the construction of networked infrastructure, enhance the shared environment, and reduce the gap between east and west.

Keywords

social public resources; network; principal component analysis.

1. Introduction

The public, shared and shared nature of social public resources determines its role in social development, people's happiness,Public security and other aspects have a decisive role, and they are increasingly valued. "Innovation, coordination, green, openness,The proposal of the five new types of social development concepts for sharing has provided a new concept for further establishing the sharing of public resources in our society.Has given proactive policy support. However, in the long-term development of our country, the allocation of public resources has accumulated a lot of ills, especially the dual allocation pattern of urban and rural areas, information islands, "information black holes", regional development imbalances, and class and circle differentiation. It has caused many adverse effects on people 's happiness and social development, such as leading to social identity discrimination, exacerbating the "Matthew Effect" in society, and weakening people 's awareness of sharing. The sharing method and construction can alleviate the dual dilemma between urban and rural areas, and realize the reform results for more people to share. Therefore, it is important to study how to improve the social public resource network sharing efficiency and achieve efficient resource sharing in the context of the "village revitalization" strategy Realistic significance.

At present domestic research on social public resource sharing. The issue of how to allocate public resources fairly and effectively and how to share public resources has attracted increasing attention, and scholars have discussed from different aspects. Li Xueping and Ye Jihong [1] paid attention to whether migrant workers should share urban public resources. They believed that urban public resources belonged to the common people and should be shared. They should not be restricted by the household registration management system. And the current social personnel flow in our country is fast, and the survival and development of migrant workers in cities has become a relatively common phenomenon, and their right to

share public resources should be maintained. However, the shortage of urban public resources to benefit migrant workers is due to the city's own resource status, the attitude of citizens, the awareness and organization of migrant workers' rights, and the results of government policy support, which should be taken seriously and resolved. Chen Yiming and Chen Wei [2] analyzed the problems in the transfer and revenue sharing of public resources in China, and pointed out that the state's policy on the reform of the distribution of revenue from public natural resources failed to cover all of the problems. Because the property rights of China's public resources are unclear, market-oriented development is not standardized, government-related supporting mechanisms are incomplete and poorly regulated, which causes public resources to have problems not only in the allocation process but also in development and utilization. Reforms are urgently needed Be corrected. Therefore, there is a large amount of literature on concrete countermeasures for the fair construction of social public resources. A lot of research has been put forward on specific countermeasures and suggestions for many public resource operation and management issues, such as: Chen Hao, Huang Shan, Lu Kechu [3] In the article, compared with traditional transaction data, the use of big data not only helps discover public resource transactions It can monitor the illegal behaviors of market entities, avoid risks in a timely manner, and at the same time predict the transaction development trend, and realize the overall control of public resource transactions. In addition, there are researches on the construction of public resources in library information resources, rural cultural resources, and urban road traffic resources.

Foreign scholars focus on practical research on fair sharing. In 1976, IFLA proposed the plan for "public publication world sharing", which opened the practice of world cultural resource sharing; in 1978, UNESCO explicitly proposed the idea of "realizing global cultural resource sharing", which pointed out the direction for world cultural resource sharing. Corinne Vandewalle believes that the government's policy tilt on urban and rural construction will cause a serious imbalance in the allocation of public resources between urban and rural areas, which will have serious consequences for the development of the entire society. Hu Xiaoming inspected and analyzed the resource sharing provisions of public libraries in 26 countries around the world. He found that the overall organizational structure of foreign libraries and the setting of relatively stable organizational and coordinating institutions have connected library resources throughout the country, making it easier for people to access materials and borrow books, and to realize the national sharing of public library resources. It provides a reference for the co-construction and sharing of public library resources in China.

Relevant literature at home and abroad has laid the foundation for further research, but there are still some shortcomings. First, domestic scholars mostly use qualitative research methods to analyze problems existing at the national level or specific provincial public resource sharing and propose countermeasures. Second, the domestic and foreign countries pay more attention to the specific practice and operating mechanism of the public resource sharing service platform. Third, a large amount of literature focuses on the research of resource construction in library resources. There are few related theoretical studies on quantitative measurement of public resource sharing.

2. Networked Sharing of Social Public Resources

2.1. Selection and System of Measurement Indicators for Social Sharing of Networked Public Resources

This article divides the indicator system into three levels: general target, dimensional indicator and individual indicator. This article has selected 7 specific indicators, the composition of the indicator system, its meaning and calculation methods, as shown in Table 1. All basic data used in this article are from China Statistical Yearbook 2012-2016, China

Information Yearbook, Internet Development Research Report, National Information Development Evaluation Report, China Internet Network Information Center Database, related Provincial (regional) statistical yearbooks and related statistical bulletins, science and technology yearbooks, etc.

In this paper, the data is preprocessed in two ways. According to the meaning of the indicator and the calculation method, all the inverse indicators are processed first, and they are turned into positive indicators by the reciprocal method, which has a positive correlation with the level of urban-rural integration. Then all the indicators are standardized, that is, de-dimensionalized, the purpose is to remove the impact of data units. Frequently used methods include extreme value method, Z-score method, and mean method. This article uses the Z-score processing method.

Table 1. Indicator system for measuring the efficiency of social sharing of networked public resources

Target layer	Criterion layer	Index layer	Code	Index	Calculation	unit
Social public resoures Networed resoure sharing efficiency	Network infrastructure level	Number of Internet broadband access users	X_1	Reflects the level of broadband popularization in the region	Number of users who have opened broadband access	Household
		Limited radio and TV household registration rate	X_2	reflects the level of regional TV network application	Number of users who have opened cable TV access / total number of households in the region	%
	Sharing channel	umber of websites per capita	X_3	reflects the level of modern information network construction	Number of regional websites / regional population	Each/ Ten thousand people
		Number of CN domain names per capita	X_4	Reflects the network of public resources	Number of regional websites / regional population	Each/ Ten thousand people

		Internet penetration rate	X_5	Reflects the Internet's ability to apply Ranch	Number of Internet users / total regional population	%
Sharing environment		Resident information consumption index	X_6	reflects residents' information consumption ability	Substitute health care, transportation, entertainment and cultural spending	yuan
		Higher education proportion	X_7	reflects the labor force's ability to acquire, develop and utilize information resources	Number of students / regional students in colleges and universities Total mouth	%

2.2. Determination of Network Sharing of Social Public Resources

This article uses spss 20.0 software to analyze the urban-rural integration level of 31 provinces across the country from 2012 to 2016. The specific steps and results are as follows:

Process the data in the data sheet. The first principal component analysis [4]: Take the dimension of integration of urban and rural social life (F3) as an example. Spss' z-sore method was used to standardize the data, and then the processed data was subjected to KMO test. The test results are shown in Table 2. On this basis, each principal component is changed from the original. The amount is expressed. The principal component coefficient vector is obtained by dividing the coefficient of each column in the principal component matrix by the arithmetic square root of its corresponding characteristic root, as shown in Table 2. Substitute the standardized data and calculate the value of each principal component. Then, using the contribution rate of the principal component as the weight, the score (F1) of the measure of social sharing of networked public resources can be obtained, that is:

$$F1=0.113*X_1+0.222*X_2+0.174*X_3+0.180*X_4+0.223*X_5+0.228*X_6+0.126*X$$

The sample data of 31 provinces are arranged vertically in order of the year, and the variables are F1, F2, F3, and the principal component analysis is performed. The steps are the same as above, and the respective contribution rates of F1, F2, and F3 are used as weights to obtain the social public network The comprehensive index F is shared, and the results are shown in Table 4.

Table 2. Social Table 2 KMO and Bartlett Test Results

KMO and Bartlett's test		
Kaiser-Meyer-Olkin metric for sample sufficiency		0.823
Bartlett's sphericity test	Approximate chi-square	139.683
	df	21
	Sig.	0.000

Table 3. Component score coefficient matrix

	Ingredients		
	1	2	3
Zscore (Number of Internet Broadband Access Users)	0.113	0.603	0.659
Zscore: Cable Radio and TV Household	0.222	-0.005	0.213
Zscore (number of websites per capita)	0.174	-0.220	-0.566
Zscore (per capita CN domain name)	0.180	0.329	-0.538
Zscore: internet penetration	0.223	-0.076	-0.031
Zscore: Per capita information consumption expenditure of residents	0.228	0.028	0.038
Zscore: Per capita share of higher education	0.126	-0.610	0.569

Table 4. Comprehensive scores of urban and rural integration of 31 provinces and municipalities in 2012 and 2016 (F value)

Comprehensive score F in 2012						Comprehensive score F in 2016					
Area	Comprehensive F	Ranking	Area	Comprehensive F	Ranking	Area	Comprehensive F	Ranking	Area	Comprehensive F	Ranking
Zejiang	141.096	1	Chongqing	-20.890	17	Beijing	216.391	1	Anhui	-26.824	17
guangdong	134.667	2	Heilongjiang	-26.914	18	Shanghai	147.541	2	Chongqing	-32.367	18
Beijing	118.294	3	Inner Mongolia	-27.369	19	Guangdong	132.126	3	Shanxi	-36.340	19

Shanghai	117.159	4	Hunan	-27.667	20	Zejiang	131.348	4	Heilongjiang	-39.333	20
Jiangsu	93.273	5	Guangxi	-29.186	21	Jiangsu	78.549	5	Hainan	-39.998	21
Fujian	47.758	6	Anhui	-40.335	22	Fujian	68.681	6	Guanxi	-41.55740997	22
Shandong	38.407	7	Jiangxi	-41.079	23	Tianjing	48.63074779	7	Inner Mongolia	-42.234	23
Tianjin	34.496	8	Xinjiang	-43.199	24	Liaoning	2.340	8	Jilin	-46.193	24
Liaoning	22.696	9	Hainan	-43.851	25	Sichuan	-5.962	9	Ningxia	-49.231	25
Hubei	-2.248	10	Wunnan	-44.679	26	Hebei	-8.106	10	Xinjiang	-50.700	26
Hebei	-5.969	11	Ningxia	-47.106	27	Shanxi	-9.378	11	Qinghai	-58.217	27
Shanxi	-8.968	12	Qinghai	-56.430	28	Hubei	-10.067	12	Guizhou	-58.682	28
Sichuan	-13.410	13	Guizhou	-63.739	29	Shandong	-10.990	13	Yunnan	-60.215	29
Jilin	-15.234	14	Gansu	-64.411	30	Hunan	-15.105	14	Gansu	-67.310	30
Henan	-18.812	15	Xizang	-86.647	31	Henan	-16.815	15	Xizang	-82.924	31
Shanxi	-19.693	16				Jiangxi	-17.057	16			

3. Conclusions of the Measurement of Social Public Resources Network
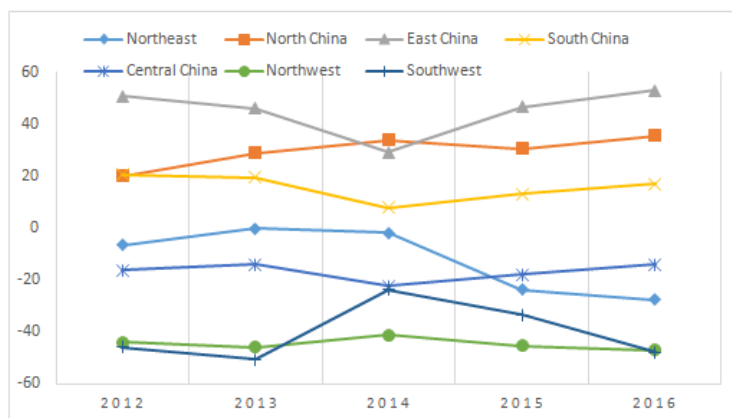

Figure 1. Comprehensive scores of seven Chinese departments in 2012 ~ 2016

Based on the comprehensive score of the social measurement of social resources in 31 provinces, the horizontal and vertical comparisons between provinces and regions can be performed intuitively.

(1) Vertical: A negative overall score indicates that its score is lower than the global average. In 2005, except for the nine provinces of Beijing, Shanghai, Zhejiang, Tianjin, Shandong, Liaoning, Guangdong, Jiangsu, and Fujian, the scores of social public resources network in the Midwest, some eastern three provinces, and eastern provinces were all negative. This shows that the network of social public resources in China was generally low in 2012, and the gap between urban and rural areas was large. By 2016, the scores of social public resources network are all negative, and Beijing has improved greatly, and the gap between provinces is large.

(2) Horizontal: From the perspective of the provinces, the differences are very obvious. In 2016, the comprehensive score of Zhejiang's public resources network was 141.096, which is higher than the level of social public resources network in some provinces five years later, but not less than 1.5 in the western provinces of the same period, a huge gap. Looking at 2016, although each province's level of urban-rural integration has made great progress, the gap between them has also widened. Rank provinces in 2012 and 2016 respectively. The top provinces from 2012 to 2016 are mainly eastern provinces, and the lower ranking provinces are basically southwest.

In the northwestern provinces, the three eastern provinces are also ranked in the middle and lower reaches.

4. Results Analysis and Recommendations

4.1. New Governance Model for Innovative Resource Sharing

At present, the governance model of China's public resources has great limitations in solving the practical dilemma of public resource sharing.Not only that, but some long-standing legacy of policies and institutions have aggravated the seriousness of the problem. Therefore, we should choose an appropriate governance model. For example, in terms of urban public construction in China, it should be based on the characteristics of each city.And actual needs to formulate a distinctive development strategy and seek diversified operating models, rather than the same, blindly building airports,Large squares, university towns, large shopping malls, etc., lead to waste of urban space resources and land resources.

Draw on the new public governance model in the West to realize the diversity of governance subjects. Since the 1970sAfter the emergence of economic, social and management crises, a monopoly and compulsory nature of abandoning traditional public management

The public governance model of industry, group and individual came into being. In this process, the government's main task is to fully tap The potential of various management and governance tools is focused on macro control rather than hands-on. This governance model gives us the enlightenment is to break the government-led single governance model and mobilize the participation of enterprises, institutions, social groups and individuals.In the process of governance of social public resources, realize the diversification of governance subjects, in order to balance the interests of all parties and achieve public.Balanced allocation of resource benefits. For example, the government can strengthen investment, financing, construction, maintenance and Management, and hand over investment, financing, and maintenance of public infrastructure in some cities that are already on track And social organizations to complete, not only reduce government financial pressure, improve the efficiency of urban infrastructure construction, but also help promote Balanced development between urban and rural areas.

4.2. Overall Planning and Coordinated Development, Narrowing the Development Gap in the Western Middle East

At present, China's social public resources are unevenly shared, which has caused the development of the western region to lag behind to a large extent in the development of the eastern region. Draw on the networked governance model to transform the governance of public resources. The "network" here refers to the network of relationships between people, organizations and organizations, or between people. Different from the new public governance model, in the process of networked governance, each governance subject takes joint actions to achieve a certain public value. Trust and cooperation are the basis of their interaction, and the negotiation mechanism is their means of interaction. Participants share power, risks, and rewards. The enlightenment this governance model gives us is to make full use of network resources to build a public resource governance relationship structure, to play the role of public relations in the integration and utilization of resources, and to enhance customer satisfaction. Of course, given the status quo of modernization and low level of informationization in many parts of our country, we first need to establish a computer network infrastructure, then use big data to integrate social public resources, change the way of public resource governance, and use its cross-temporal and cross-regional Features Realize public resource information sharing, urban-rural co-construction, and regional coordination.

References

[1] Ye Jihong, Li Xueping. Study on the Problem of Migrant Workers Sharing Urban Public Resources---Based on the Investigation of Xiangcheng District, Suzhou [J]. Journal of Nanjing Institute of Population Management (4): 12-17.

[2] Chen Wei [1], Chen Yiming [2]. Basic framework and empirical implications of the reasonable sharing mechanism of China 's public resource transfer revenues---Taking state-owned natural resources as an example [J]. Shanghai Economic Research, 2014 (11): 16 -twenty three.

[3] Huang Shan, Chen Hao, Lu Kechu. Research on the Advantages of Using Big Data to Realize the Sharing of Public Resource Transaction Information [J]. Enterprise Technology and Development, 2016, No.412 (02): 87-89.

[4] Li Shengkun et al. The rise of central China proposed the evolution of the economic spatial pattern of counties in Wuhan urban circle in the past 9 years: based on GPCA model and ESDA method [J]. Research of Agricultural Modernization, 2014 (7): 410-416.