

Research on the Path to Achieving Equalization of Basic Public Services in Zhejiang Province

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Abstract

The current situation that the total supply of basic public services in rural areas of Zhejiang Province is insufficient and unbalanced with the demand determines the need to conduct an in-depth study on the equalization of basic services in rural areas. The article uses the entropy power method and the Thiel index method to analyze the level of basic public service equalization and the least squares method to conduct regression analysis, and finally proposes practical suggestions for the equalization of basic public services. The study finds that the overall level of basic public service equalization in Zhejiang Province during 2018-2021 is showing an upward trend, the level of basic public facility equalization is on the rise, basic public education maintains a relatively stable trend, while the level of basic medical and health equalization is affected by factors such as epidemics and the development is relatively stable, and the level of basic social security equalization is all increasing. Among the 11 cities in Zhejiang, Hangzhou has the highest level of equalization of basic services. Through the regression we can learn that both the economic level and the financial level have positive effects on the equalization of basic public services.

Keywords: equalization of basic public services, entropy method, thiel's index method, least squares regression model

DOI: 10.7176/EJBM/15-19-08

Publication date: December 31st 2023

1. Introduction

From a global perspective, rapid growth in wealth production during a certain period is not a difficult problem to achieve. However, how to distribute and consume wealth more fairly and justly is a more difficult problem to solve. The core of gradually achieving equalization of basic public services is to promote equal opportunities, with a focus on ensuring that the people have access to basic public services, rather than simply averaging them out. Promoting equalization of basic public services is a necessary step in building a moderately prosperous society in all respects. It is of great significance for promoting social fairness and justice, improving people's well-being, enhancing the sense of gain for all people in building and sharing development, and realizing the Chinese Dream of national rejuvenation. The Fifth Plenary Session of the 19th Communist Party of China Central Committee has made new arrangements for promoting equalization of basic public services, clearly stating that by the end of the 14th Five-Year Plan period, the level of equalization of basic public services should be significantly improved, and by 2035, basic public services should be equalized. In 2021, as the starting year, we must solve the contradiction of insufficient supply and uneven development of public services in education, medical and health care, and social security, adhere to the development strategy of equalization of basic public services, and hand in a qualified answer sheet for consolidating the achievements of poverty alleviation, effectively connecting rural revitalization and building a socialist modernization country in an all-around way. The 10th meeting of the Financial and Economic Affairs Committee also regards promoting equalization of basic public services as an important task for solidly promoting common prosperity. This indicates that achieving common prosperity is the value goal of promoting equalization of basic public services, and promoting equalization of basic public services is the focus of achieving common prosperity. Achieving equalization of basic public services in rural areas, providing basic and roughly equal public services to rural residents, allowing the vast majority of farmers to have income, education, medical care, elderly care, and housing, can to a certain extent correct the initial imbalance of social wealth distribution, eliminate unfair phenomena in the field of public services, and improve the overall efficiency of society.

Scholars generally agree that empirical research should be strengthened to clarify the supply status of basic public services and a scientific indicator system should be designed to measure the level of equalization of basic public services. However, currently, these two types of research are still insufficient, manifested in three aspects: firstly, the supply status of basic public services is defined based on subjective judgments, which is vague and lacks support; secondly, there is a lack of scientific measurement methods and comprehensive measurement indicator systems; thirdly, most of the existing equalization measurements are based on macro-level research, often studying the differences in basic public services across the country or regions, and lacking micro-level measurements for a specific province. Based on this, this article takes Zhejiang Province as an example, establishes statistical indicators for equalization of basic services, further analyzes the degree of equalization of basic services

in rural areas of various cities in Zhejiang, and explores the path to achieving equalization, hoping to provide reference for policy optimization.

2. Construction of the index system of the level of equalization of basic public services

2.1 Definition of the concept of equalization of basic public services

Regarding the concept of equalization of basic public services, scholars have defined it mainly in terms of equal rights, equal opportunities, equal results, and structural equality. One is defined from the perspective of basic rights. Second, it is defined from the perspective of equal opportunity. Thirdly, it is defined from the perspective of equality of results. The emphasis is on the roughly equal level of basic public services enjoyed by citizens, i.e., equality of results. Fourth, it is defined from the perspective of constituent elements.

2.2 Scope of basic public services

A clear definition of the scope of basic public services is the first and foremost condition for the correct selection of variables for measuring the performance of urban and rural basic public service systems, which is also a key aspect in the practice of local governments at all levels and a key and difficult issue of great concern to the academic community. One is to define the scope of basic public services by the classification of basic public services. One is to define the scope of basic public services from the perspective of the basic public service rights that citizens should enjoy. One is to list the scope of basic public services from the perspective of social undertakings and livelihood issues. The research group of the Macroeconomic Research Institute of the National Development and Reform Commission has defined the scope of national basic public services at the present stage in China as medical and health care, basic education, social assistance, employment services, pension insurance and guaranteed housing. The 12th Five-Year Plan of the National Basic Public Service System also defines the scope of basic public services as: basic public education, labor and employment services, social insurance, basic social services, basic medical and health care, basic housing security, public culture and sports, and basic public services for people with disabilities. Combining the above considerations and considering the operability, this study focuses on the measurement of basic public education, basic medical care and health, basic social security and basic public facilities within the scope of equalization of basic public services.

2.3 Construction of the index system of equalization of basic public services

(1) Basic public education. The improvement of individual's ability will promote the improvement of social welfare level. Under the concept of people-oriented, individual ability is mainly reflected in the inherent knowledge and cultural quality and physical quality. Therefore, the dimension of basic public education is divided into three specific indicators: the number of books in public libraries, the number of students in primary and secondary schools, and the number of gymnasiums.

(2) Basic health care. Health care is directly related to human survival and health. Health care needs to take into account factors such as accessibility and convenience of medical services. Therefore, in the health care dimension, three items, namely the number of beds, the number of health centers, and the number of doctors, are selected as assessment indicators.

(3) Basic social security. At present, social welfare in China is mainly embodied as survival welfare rather than development welfare, i.e., it includes economic and material welfare such as old-age security, medical security, unemployment relief, etc., which is synonymous with social security, which is the institutional arrangement to safeguard the most basic human right of individuals - the right to survival. Three assessment indicators were selected under the social security dimension: the number of participants in basic medical insurance, the number of participants in pension insurance and the number of participants in unemployment insurance.

(4) Basic public facilities. As the physical engineering facilities for public services, infrastructure is the basis for social production, people's life and other service activities. With the improvement of living standards, citizens' demand for infrastructure is increasing and their requirements for its quality are becoming higher. Infrastructure generally includes transportation, post and telecommunications, water and electricity supply and other municipal public works facilities and public service facilities. Here, three items are selected as the assessment indexes of infrastructure, namely, income from telecommunication services, number of civilian vehicles and electricity consumption of urban and rural residents. The specific index system is shown in Table 1.

Table 1. Evaluation System of Indicators for Equalization of Basic Public Services

	Tier 1 Indicators	Secondary indicators
Equalization of Basic Public Services	Basic Public Education	Collection of Books in Public Libraries
		Number of Primary and Secondary School Students
	Basic Medical and Health Care	Number of Sports Facilities
		Number of Hospital Beds
		Number of Health Clinics
		Number of Doctors
	Basic Social Security	Number of Participants in Basic Medical Insurance
		Number of Participants in Pension Insurance Number of Participants in Unemployment Insurance
	Basic Public Facilities	Telecommunications Business Revenue
		Number of Civilian Vehicles
Electricity Consumption for Urban and Rural Residents		

2.4 Data sources

The article takes 11 municipalities in Zhejiang Province as the research object to study the level of equalization of basic public services in Zhejiang Province from 2018 to 2021. The data are mainly from the statistical yearbooks of Zhejiang Province in 2019, 2020, 2021 and 2022, as well as the statistical yearbooks of each city.

2.5 Research Methodology

In this paper, the research on the level of equalization is conducted by combining the entropy method and the Thiel index method, in addition to least squares regression to analyze the relationship between the level of equalization and the local economy and finance.

3. Actual measurement of the level of equalization of basic public services in Zhejiang Province

3.1 Entropy method measurement results

The proportion of the four dimensions in each city of Zhejiang Province in 2018-2021 is calculated according to the entropy weighting method. The results of the annual public service equalization weights in Zhejiang Province from 2018-2021 are shown in Table 2.

In order to make the evaluation results more concise and intuitive, the annual equalization indexes for 2018-2021 were plotted as line graphs, and the results are shown in Figure 1.

From Table 2 and Figure 1, we can see that the weight of basic public education in Zhejiang Province fluctuates less in these four years from 2018 to 2021, the degree of equalization does not fluctuate much, and the overall level is relatively stable. The weight of basic medical and health care and basic public facilities has increased to a large extent, while the weight of basic social security has changed the most, from 0.28 in 2018 to 0.24 in 2021, although showing a decreasing trend, and in general, the level of equalization of basic public services has improved.

Table 2 Weighting results of equalization of basic public services in Zhejiang Province

Year	Basic Education	Public	Basic Medical and Health Care	and Basic Social Security	Basic Facilities	Public
2018	0.25163601		0.23324057	0.28055295	0.23457048	
2019	0.25553232		0.23671299	0.27019342	0.23756128	
2020	0.24496392		0.22756804	0.31436391	0.21310413	
2021	0.23531706		0.25715858	0.24251287	0.26501149	

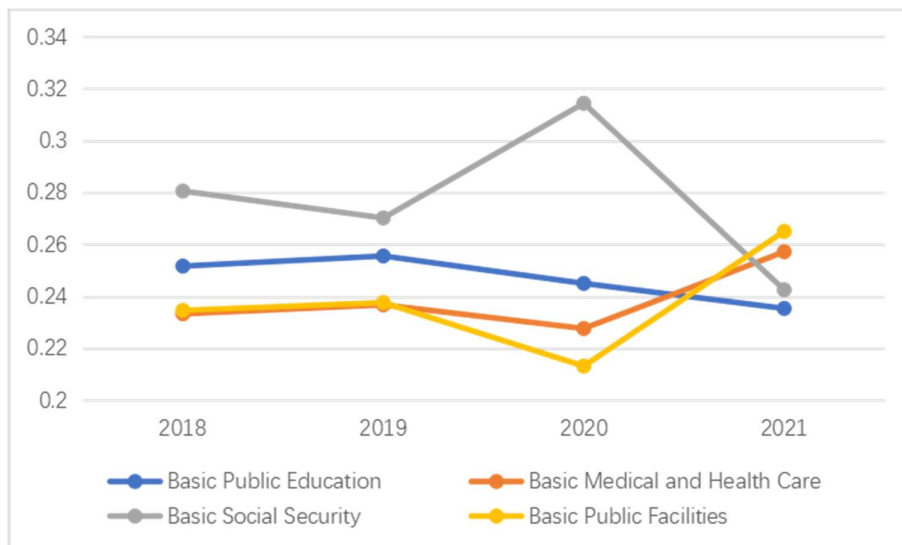


Fig1. Weighting Results of Equalization of Basic Public Services in Zhejiang Province.

3.2 Results of Thiel index method measurement

The values of the public service equalization index (i.e., Thiel index) for the total regional differences in 4 dimensions for each city in Zhejiang Province from 2018 to 2021 are calculated according to formula (1). The annual public service equalization indices of Zhejiang Province for 2018-2021 are shown in Table 3.

Table 3 Weighting Results of Equalization of Basic Public Services in Zhejiang Province

Year	Basic Public Education	Basic Medical and Health Care	Basic Social Security	Basic Public Facilities
2018	0.166198	0.049328	0.103184	0.050815
2019	0.1325	0.053738	0.099374	0.048771
2020	0.173136	0.05502	0.176419	0.048608
2021	0.037904	0.05485	0.091778	0.049506

In order to make the evaluation results more concise and intuitive, the annual equalization index for 2018-2021 is plotted as a line graph, and the results are shown in Figure 2.

From Table 3 and Figure 2, we can see that the total index of parity in Zhejiang Province shows an increasing trend during 2019-2020, rising from 0.33 in 2019 to 0.45 in 2020; from the general trend of 2018-2021, the value of parity decreases from 0.36 to 0.23, the difference of public service level gradually decreases, and in general, the level of parity of basic public services has improved.

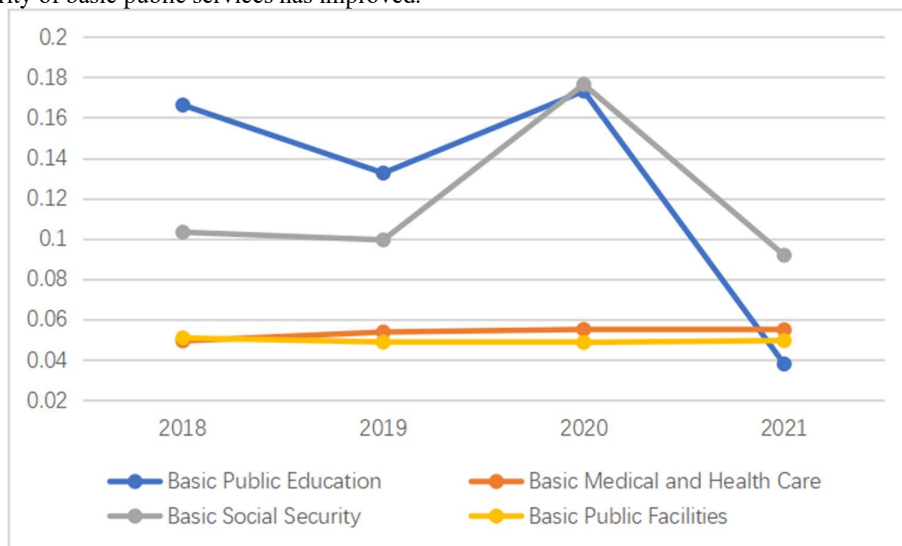


Figure 2 Calculation Results of the Index for Equalization of Basic Public Services in Zhejiang Province

During the "13th Five-Year Plan" period, Zhejiang Province will promote the equalization of basic public services in terms of list, standardization and institutionalization, build a basic public service system covering basic public education, basic employment and entrepreneurship, etc. More than two-thirds of the province's new financial resources will be spent on people's livelihood, and the level of standardization and equalization of basic public services will be at the forefront of the country. The province is at the forefront of the country in terms of standardization and equalization of basic public services. Basic public education has been higher than other indicators, maintaining a parity level of about 0.04, with little fluctuation in parity and a relatively stable overall level. The basic medical and health index shows an upward trend, mainly due to the impact of the epidemic, resulting in a stagnant level of parity. The basic social security index shows a decreasing trend in general, and the level of equalization keeps improving. The basic public facilities index, on the other hand, remains around 0.49, which is lower compared to the 2018 data, indicating that the level of parity has improved.

3.3 Comparison of results

Through the analysis of entropy weight method and Thiel index method, we can find that the overall level of equalization of basic public services in Zhejiang Province during 2018-2021 is showing an upward trend. The level of equalization of basic public facilities measured by both methods is on an upward trend, basic public education maintains a relatively stable trend, while the level of equalization of basic health care is relatively stable in development due to factors such as epidemics, and the level of equalization of basic social security and the level of equalization of basic public facilities are both increasing.

3.4 Least squares regression

Before analyzing the relationship between the level of equalization development and economy and finance through least squares regression, we first measure the level of equalization development, and calculate the level of development through the weights measured by the entropy weight method earlier, and the specific results are shown in Table 4.

From Table 4, we can conclude that from 2018 to 2021, the level of equalization of basic services in Zhejiang Province has been rapidly improved. Among the 11 cities in Zhejiang, Hangzhou has the highest level of equalization of basic services, followed by Wenzhou, Ningbo is the third, and the cities with poor equalization of basic services are Zhoushan, Quzhou, Huzhou, and Lishui. However, Zhoushan City has the fastest growth rate in the level of equalization of basic public services. Hangzhou, as the capital of Zhejiang Province, is ahead of other cities in terms of the level of basic public services. Wenzhou, Ningbo, Taizhou, and Jinhua have the second highest level of public services, while Zhoushan, Jiaying, Huzhou, Shaoxing, Lishui, and Quzhou are the six cities that are relatively lagging behind in terms of basic public services. It can be found that the cities with high level of basic public services are located in northeast Zhejiang, while the level of public services in southwest Zhejiang is generally lower.

Table 4: Weighting Results of Equalization of Basic Public Services in Zhejiang Province.

	2018	2019	2020	2021
Hangzhou	0.313989151	0.333332261	0.709413806	0.820620384
Ningbo	0.179783229	0.192899557	0.368927793	0.54699925
Wenzhou	0.19044502	0.200542898	0.402624446	0.580316269
Jiaying	0.087540739	0.095916072	0.191096207	0.314795604
Huzhou	0.041242688	0.047293729	0.110844634	0.162330283
Shaoxing	0.082974568	0.091133055	0.204246246	0.33060584
Jinhua	0.117761689	0.127011323	0.257143605	0.413540536
Quzhou	0.029387288	0.032046347	0.094172126	0.157032507
Zhoushan	0.000265038	0.001418185	0.023416613	0.043124491
Taizhou	0.12482305	0.130207975	0.286403907	0.4229205
Lishui	0.024615129	0.027556537	0.095409252	0.170248561

In order to explore the relationship between the level of development and the economy and the fiscal, we create regression equations for the analysis. We choose to measure the economic level by gross product (X1) and the fiscal level by general public budget expenditure (X2). The final equation of the relationship between the development level of equalization of basic public services and the economy and finance is shown below.

$$Y = 0.009 + 0.334x_1 + 0.005x_2 \quad (1)$$

From the relational equation, we can get that both economic level and fiscal level have a positive effect on the equalization of basic public services, with each unit increase in economic level, the equalization level of basic public services increases by 0.334, and each unit increase in fiscal expenditure, the equalization level of basic services increases by 0.005. The level of economic development affects the productive capacity of local

governments in basic public services. Regions with lower levels of economic development take the basic idea of efficiency first and regard boosting economic growth as the main task of the government. Therefore, they tend to invest financial resources in projects that are significant to GDP growth and lack the motivation to invest in public services for people's livelihood such as education and social security. Due to the leading level of economic development in northeast Zhejiang, the fiscal revenue is nearly twice that of southwest Zhejiang, which directly affects the scale of fiscal expenditure on public services and strongly promotes the supply of basic public services.

4. Conclusions and Suggestions

4.1 Conclusion

Through the analysis of entropy power method and Thiel index method, we can find that the overall level of equalization of basic public services in Zhejiang Province during 2018-2021 is showing an upward trend. The level of equalization of basic public facilities measured by both methods is on an upward trend, basic public education maintains a relatively stable trend, while the level of equalization of basic medical and health care is relatively stable in development due to factors such as epidemics, and the level of equalization of basic social security is all increasing.

From 2018 to 2021, the level of basic service parity in Zhejiang Province has been rapidly improved, and among the 11 cities in Zhejiang, Hangzhou has the highest level of basic service parity, followed by Wenzhou, Ningbo is the third, and the cities with poor level of basic service parity are Zhoushan, Quzhou, Huzhou, and Lishui. Through the regression, we can learn that both economic level and fiscal level have a positive effect on the equalization of basic public services, with each unit increase in economic level, the equalization level of basic public services increases by 0.334, and each unit increase in fiscal expenditure, the equalization level of basic services increases by 0.005.

4.2 Suggestions

First, we should insist on narrowing the gap. On the whole, the regional, urban-rural and inter-school gaps in public services for education in our province are still relatively large. During the epidemic, the online and offline integration of education in the regions that developed first, and some backward regions are still worrying about how to guarantee the learning terminals for teachers and students. The epidemic not only magnified the differences in educational capacity and teaching of different schools and teachers, but also the impact of family education on children and adolescents' learning motivation, learning methods and learning abilities. The foundation and root of promoting education equity and quality lies in improving the "bottom" of basic public education services. This "bottom" is mainly in rural areas, weak schools and educationally disadvantaged families. Throughout the 14th Five-Year Plan period, the province's basic public education service system still needs to narrow the education gap, focusing on four factors: regional, urban-rural, inter-school and group.

Second, improve the financial system and clarify expenditure responsibilities. The responsibilities of local governments at all levels for affairs and expenditures should be clarified, and a financial system matching affairs and financial powers should be established. The division of governmental powers at all levels should determine the governmental responsibility for public service supply in accordance with the scope of public service public welfare involved. In certain cities and counties in southwest Zhejiang with relatively poor economic level, the problem of insufficient funds can be partially solved by transfer payments from the provincial government to the county government. In a word, the financial power of local governments should be matched with the service power on the basis of a clear division of the service power and fixed by law.

Third, enrich the supply channels and improve the efficiency of services. The government's provision of public services does not mean that the government produces public goods exclusively; the government can organize the private sector or non-profit organizations to provide them. On the one hand, market organizations can be encouraged to provide public services through institutional arrangements such as contract outsourcing, franchising, and preferential subsidies, while on the other hand, non-profit organizations have advantages in public service provision due to their service-oriented and public good orientation. In addition, people in local communities have the greatest incentive to provide services. The provision of public services through multiple channels not only makes up for the lack of government financial and material resources, but also improves the efficiency of public service provision.

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