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Research on the Effects of Public Cultural Service Equalization Policies

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ABSTRACT

Public cultural services are an essential component of a spiritually and culturally rich life, significantly contributing to enhancing the cultural level of the population, improving quality of life, and fostering a sense of happiness, which in turn drives social development. Recently, public cultural services have increasingly become a central focus of government initiatives. This study uses the "Opinions on Accelerating the Construction of a Modern Public Cultural Service System" (State Council, 2015) as a case study, selecting evaluation indicators from both input and output perspectives. It analyzes panel data from 31 provinces in China from 2000 to 2018, employing synthetic control methods and equalization coefficient approaches to assess the effectiveness of public cultural service equalization policies. The findings reveal that the impacts of public cultural service equalization policies are not significant. Further analysis of influencing factors indicates that education level (illiteracy rate) has the most substantial effect on the degree of public cultural service equalization, followed by the government's prioritization (the proportion of public cultural service expenditures to total public service expenditures), and lastly, economic development level (Gross Domestic Product, GDP). Based on these findings, the paper recommends reducing the illiteracy rate, increasing government investment, and promoting coordinated economic development.

KEYWORDS: Public Cultural Service Equalization, Policy Effects, Influencing Factors

1. Introduction

With the rapid development of China's economy and society, the demand for spiritual and cultural life among the populace has been steadily increasing. Public cultural service equalization has become an important issue for government work. In recent years, the Central Committee of the Communist Party of China and the State Council have placed a high priority on the construction of the public cultural service system, issuing a series of policy documents aimed at promoting public cultural service equalization and narrowing the cultural gap between urban and rural areas, regions, and different groups. Notably, in 2015, the General Office of the Central Committee and the General Office of the State Council issued the "Opinions on Accelerating the Construction of a Modern Public Cultural Service System," which provides clear policy guidance and action plans for public cultural service equalization. Currently, public cultural service facilities, resources, and activities between urban and rural areas, and public cultural services in rural and underdeveloped regions are relatively lagging.

On the other hand, access to public cultural services is also unequal among different groups, with vulnerable populations' cultural rights failing to receive effective protection. The existence of these issues not only affects the cultural fulfillment and sense of happiness of the people but also restricts the overall development of China's cultural undertakings. Therefore, researching the effects of public cultural service equalization policies and exploring pathways and strategies to enhance equalization levels hold important practical significance and theoretical value.

In recent years, domestic experts and scholars have conducted considerable research on the measurement of public cultural service equalization, the issues that exist, and the strategies for promoting it. Most scholars have employed methods such as the equalization coefficient (Song,2011), Gini coefficient (Peng, & Pi,2018), Theil coefficient (Peng, 2023; Liu, 2019), and



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comprehensive index method (Fu, 2018) to measure public cultural service equalization. While there has been some progress in equalizing basic public cultural services between urban and rural areas in China, several issues persist, primarily concentrated in three areas: First, there is a significant urban-rural gap (Gan, 2023) and regional development imbalance (Peng. & Jin, 2023). Due to inconsistent policy support between urban and rural areas and substantial economic disparities, public cultural services are uneven in resource allocation and service effectiveness, negatively affecting the achievement of equalization goals (Zhang & Fei, 2023). Second, the fiscal system has led to a structural imbalance in public cultural services, with government spending on these services being relatively low (Han& Liu, 2019). Third, the supply of public cultural services is insufficient, requiring improvements in content, quality, and efficiency. Some regions face issues such as a lack of diverse supply forms, insufficient participation from social forces, and outdated content (Chen, 2024). Many cultural projects are not based on public needs, resulting in actual service outcomes that do not meet expectations (Zhao, 2016). In response to these issues, existing literature primarily proposes three strategies: First, optimizing top-level design and improving the policy system and support policies for urban and rural public cultural services; standardizing the fiscal system and adjusting the structure of fiscal investment to ensure financial input for the construction of the public cultural service system (Wu. et al., 2023); leveraging government fiscal funding to guide public cultural service equalization (Han & Liu, 2019); and strengthening fiscal transfer payments to ensure the sustainable development of services (Wang & Chen, 2024). Second, streamlining and innovating the public cultural service supply system, increasing pathways for public participation, and encouraging social forces to engage in the supply of public cultural services to form a governance model that coordinates the government, market, and society (Zhang & Fei, 2023); promoting the PPP model for public cultural service supply, bringing in social capital to cooperate with the government, and enhancing the level and capacity of public cultural service supply (Yang, 2019); and innovating public cultural service methods through deepening digital empowerment to enhance the inclusiveness and accessibility of services (Shang & Zhao, 2024). Third, improving service quality by establishing standardized services to enhance the quality and efficiency of public cultural services, thereby increasing their attractiveness and leadership (Chen, 2024).

Since the concept of "public service equalization" was first introduced in 2005, many scholars have focused their research on various aspects, including the connotation of public service equalization, policies, existing issues, and potential solutions. However, what is the effectiveness of policy implementation? What factors influence policy effectiveness? What are the pathways to enhance the effectiveness of public cultural service equalization policies? These require further analysis.

2. Measurement of the Effects of Public Cultural Service Equalization Policies

2.1 Objectives of Public Cultural Service Equalization Policies

The "Opinions on Accelerating the Construction of a Modern Public Cultural Service System," issued in 2015 by the General Office of the Central Committee and the State Council (hereinafter referred to as the "Opinions"), outlines important policies for public cultural service equalization during the supply process. It primarily proposes the following specific objectives for public cultural service equalization:

First, promote the equalization of regional public cultural services. This involves advancing the equalization process of public cultural services in old revolutionary areas, autonomous ethnic regions, border areas, and impoverished regions. In line with the current targeted poverty alleviation strategy, a series of cultural poverty alleviation initiatives will be concentrated, ensuring the allocation of supporting funds for public cultural projects in specific areas. Implement paired assistance between regions, providing one-on-one project support, talent transfer, and training assistance.

Second, promote the equalization of public cultural services for different groups. The focus will be on advancing equal access to public cultural services for the elderly, children and adolescents, persons with disabilities, migrant workers, left-behind women and children, and impoverished populations. Develop distinctive cultural publications tailored to special groups, host cultural and artistic activities that meet group needs, and make full use of and connect museums, art galleries, libraries, and internet infrastructure.

Third, establish standards for public cultural services and a dynamic adjustment mechanism. Based on the overall economic and social development status and supply levels of the country, unified public cultural service standards will be formulated to clarify the content, quantity, and level of public cultural services. Different regions will formulate local public cultural service standards based on national standards and actual conditions. A dynamic adjustment system will be established to modify national and local public cultural service standards to adapt to economic and social progress.

Fourth, ensure the equalization of construction, management, and service levels of public cultural facilities. Public cultural facilities will be constructed in balance with population and development needs, striving for equitable quality. Strengthen the management of the operation and service of public cultural facilities, clarify the operational service standards for different categories of public cultural facilities, and promote the equalization and standardization of facility management and service levels.

2.2 Policy Instruments Selected for Implementing Equalization Policies

2.2.1 Categories of Policy Instruments

Policy instruments refer to the specific methods and means employed to address certain social issues or achieve specific policy objectives. The range of specific methods and means available for achieving these objectives is quite broad, but they can



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generally be divided into four main categories: market instruments, voluntary instruments, mandatory instruments, and mixed instruments.

Market instruments refer to the methods by which the government utilizes market mechanisms to achieve the efficient provision of public goods and services. This includes privatization, pay-for-use schemes, outsourcing contracts, and internal markets.

Voluntary instruments are those in which there is minimal government involvement, and public goods or services are provided voluntarily by social groups, such as families and communities, or non-profit organizations. Mandatory instruments involve the use of governmental authority to compel target groups to engage in or refrain from certain behaviors, with primary forms including regulation, direct provision, and public enterprises.

Mixed instruments refer to policy tools that combine characteristics of both voluntary and mandatory instruments, including persuasion, subsidies, property auctions, and taxation.

Policy instruments are at the core of policy implementation, and the flexible selection of these instruments is a crucial premise for achieving objectives.

2.2.2 Selected Policy Instruments

The following analysis will focus on the policy tools selected in the "Opinions on Accelerating the Construction of a Modern Public Cultural Service System."

First, there are market instruments. Article 10 of the "Opinions" states that guiding documents for government procurement of public cultural services will be issued, and funding for these services will be included in the fiscal budget to increase the procurement of public cultural services. It emphasizes that, in areas with conditions, qualified social organizations and enterprises can be attracted "through delegation or bidding processes."

Second, voluntary instruments are highlighted. Article 4 of the "Opinions" mentions relying on communities to improve facilities and establish public cultural service points to ensure that public cultural services are delivered to residents. Articles 11 and 12 further propose that public cultural service matters suitable for the provision by social organizations be entrusted to these organizations, guiding cultural social institutions to carry out public cultural services by the law. Additionally, cultural volunteer services are encouraged, promoting grassroots cultural service provision by social and artistic groups.

Next are mandatory instruments. Articles 13, 14, and 15 of the "Opinions" indicate the promotion of greater public access to cultural facilities such as libraries, museums, art galleries, and memorials, as well as the implementation of inter-library cooperation, cultural and artistic activities in schools, and community outreach programs, thereby facilitating the direct provision of public cultural services.

Finally, mixed instruments are addressed. Article 24 of the "Opinions" stipulates tax deductions and subsidies for donations to public cultural undertakings from individuals, social groups, and institutions, along with subsidies for public cultural service projects.

2.3 Measurement Indicators for the Effects of Equalization Policies

The factual standard theory of policy effect evaluation posits that the impact of a policy is vividly reflected in two aspects: the resources invested in its implementation and the resulting outputs after implementation. Based on a thorough review of the literature related to policy effect evaluation and referencing the statistical indicators from the "Statistical Yearbook of Chinese Culture and Cultural Relics," this paper ultimately selects evaluation indicators from two perspectives: input and output.

2.3.1 Input Equalization

(i) Per Capita Cultural Expenditure (Yuan)

Due to the varying geographic areas, economic sizes, and disparities in fiscal revenue across the 31 provinces, using the total financial investment in public cultural services as an indicator lacks representativeness. Therefore, this paper uses per capita cultural expenditure to measure the financial input in public cultural services.

(ii) Proportion of Cultural Expenditure in Total Fiscal Expenditure (%)

The proportion of cultural expenditure in fiscal outlays reflects the degree of government investment in public cultural services within a given region.

(iii) Number of Employees in Cultural Undertakings (Persons)

The number of employees in cultural undertakings primarily consists of personnel from artistic groups, library staff, museum employees, and community cultural center staff, illustrating the human resources that the government allocates to public cultural services.

(iv) Number of Cultural Institutions (Units)

The count of cultural institutions includes the number of performing arts organizations, libraries, museums, and community cultural centers, reflecting the material resources that the government invests in public cultural services.

2.3.2 Output Equalization

(i) Number of Cultural Activities (Occurrences)



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This includes the number of performances by artistic groups, the frequency of exhibitions organized by museums, and the number of training sessions conducted by community cultural centers. This metric reflects the quantity of public cultural services provided by the government following the implementation of policies.

(ii) Number of Participants in Cultural Activities (Ten Thousand)

This encompasses the total audience for artistic performances, the total circulation of library materials, the number of visitors to museums, and the number of participants graduating from training sessions at community cultural centers. This metric illustrates the effectiveness of public cultural services.

2.4 Evaluation of the Effects of Equalization Policies

2.4.1 Evaluation Method

Using the synthetic control method, this study selects panel data related to the implementation of equalization policies from 2000 to 2018 across the 31 provinces in China, as reported in the "Statistical Yearbook of Chinese Culture and Cultural Relics" and the "China Statistical Yearbook." A trend-moving average model is established to predict the indicators for public cultural services in 2018 across the 31 provinces, assuming that no equalization policies were implemented. Subsequently, the equalization coefficients for each province are calculated by comparing the predicted data with the actual observed values, thus determining the effects of the equalization policies.

(i) Trend Moving Average Model

Given that the overall level of public cultural services exhibits an upward trend, employing a simple moving average or weighted moving average on the time series data for each region and each indicator results in lagged biases in the predicted data, making it impossible to derive accurate forecast values based on the existing trends. Therefore, a second moving average is applied to correct the lagged errors in the predictions, creating a linear trend prediction model known as the trend moving average model. The formula for the first moving average is as follows:

$$y_{t+1} = M_t^1 = \frac{1}{N}(y_t + y_{t-1} + \dots + y_{t-N+1})$$

In this context, y_{t+1} represents the forecast value for the next period, M_t^1 is the moving average value for the current period and N denotes the number of time intervals. This means that the moving average value for the current period is used as the forecast value for the subsequent period. After the first averaging, a second moving average is performed, with the formula as follows: $M_t^2 = \frac{1}{N}(M_t^1 + M_{t-1}^1 + \dots + M_{t-N+1}^1) = M_{t-1}^2 + \frac{1}{N}(M_t^1 - M_{t-N}^1)$

N represents the number of time intervals, while M_t^1 , M_{t-1}^1 , M_{t-N+1}^1 and others are the new time series data calculated from the first moving average. Using the new time series data obtained from the second moving average, a linear trend prediction model is established:

$\widehat{y_{t+m}} = a_t + b_t m$

t represents the current time period, m indicates the number of periods between the current time and the forecast period, a_t denotes the intercept, b_t signifies the coefficient. The formulas for calculating the intercept and the coefficient are as follows:

$$\begin{cases} a_t = 2M_t^1 - M_t^2 \\ b_t = \frac{2}{N-1}(M_t^1 - M_t^2) \end{cases}$$

(ii) Equalization Coefficient Method

The equalization coefficient method was proposed by Professor Hu Shuigen from the School of Public Management at Zhejiang University, building upon the traditional benchmark method for policy evaluation. The equalization coefficient refers to the coefficient obtained by comparing various sub-units within a region according to a unified standard, with the calculation formula as follows: $a = \frac{b}{c}$

a represents the equalization coefficient of a particular sub-unit, *b* denotes the value of public cultural services for that sub-unit during a specific period, and *c* refers to the maximum value of public cultural services achieved in a region during that period (the benchmark value). The coefficient a typically falls within the range of [0, 1]. When a is in the interval [0.6, 1], it is generally considered that the public cultural services of the sub-unit exhibit varying degrees of equalization; whereas, when a is in the interval [0, 0.59], it is regarded that the public cultural services of the sub-unit display varying degrees of inequality.

2.4.2 Evaluation Results

Based on the predicted and observed values of each equalization indicator, the highest value among the 31 provinces is selected as the benchmark value to calculate the equalization coefficient for each province.

(i) Equalization of Per Capita Cultural Expenditure



5

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	Region	Predicted Value	Predicted Equalization Coefficient	Observed Value	Actual Equalization Coefficient	Actual Coefficient Predicted Coefficient
	Beijing	140.06	0.73	162.36	0.74	0.01
	Tianjin	98.69	0.51	101.18	0.46	-0.05
Eastern Region	Hebei	26.02	0.13	24.76	0.11	-0.02
	Region Predicted Value Predicted Equalization Coefficient Observed Value Actual Equalization Coefficient Beijing 140.06 0.73 162.36 0.74 Tianjin 98.69 0.51 101.18 0.46 Hebei 26.02 0.13 24.76 0.11 Liaoning 40.59 0.21 44.36 0.20 Shanghai 162.55 0.84 174.44 0.79 geion Zhejiang 90.62 0.47 97.41 0.44 Fujian 50.03 0.26 55.70 0.25 Shandong 33.19 0.17 32.27 0.15 Guagdong 52.45 0.27 59.73 0.24 Jilin 57.05 0.30 58.52 0.27 Hainan 84.07 0.44 76.56 0.35 58.52 0.27 Hainan 84.07 0.24 Jilin 57.05 0.30 58.52 0.27 Heilongjiang 39.44 0.20 46.19 0.21 at.3	0.20	-0.01			
F (Shanghai	162.55	0.84	174.44	0.79	-0.05
Eastern	Jiangsu	58.66	0.30	58.86	0.27	-0.04
Region	Zhejiang	90.62	0.47	97.41	0.44	-0.03
	Fujian	50.03	0.26	55.70	0.25	-0.01
	Shandong	33.19	0.17	32.27	0.15	-0.03
	Guangdong	52.45	0.27	59.73	0.27	0.00
	Hainan	84.07	0.44	76.56	0.35	-0.09
	Shanxi	52.12	0.27	53.73	0.24	-0.03
	Jilin	57.05	0.30	58.52	0.27	-0.03
	Heilongjiang	39.44	0.20	46.19	0.21	0.01
Central Region	Anhui	24.10	0.12	28.34	0.13	0.00
Region	Jiangxi	27.73	0.14	28.08	0.13	-0.02
Region Central Region	Henan	23.55	0.12	23.37	0.11	-0.02
	Hubei	39.50	0.20	49.35	0.22	0.02
	Hunan	30.73	Predicted Equalization CoefficientObserved Value0.73162.360.51101.180.1324.760.2144.360.84174.440.3058.860.4797.410.2655.700.1732.270.2759.730.4476.560.2753.730.3058.520.2046.190.1228.340.1428.080.1223.370.2049.350.1635.460.50103.000.2141.200.3167.200.2948.860.2042.510.2345.851.00220.010.3456.830.2654.850.66132.320.47100.270.4269.04	0.16	0.00	
	Inner Mongolia	97.39	0.50	103.00	0.47	-0.04
	Guangxi	39.60	0.21	41.20	0.19	-0.02
Eastern Region Central Region Western Region	Chongqing	59.27	0.31	67.20	0.31	0.00
	Sichuan	55.39	0.29	48.86	0.22	-0.07
	Guizhou	38.28	0.20	42.51	0.19	-0.01
Eastern Region Central Region Western Region	Yunnan	43.67	0.23	45.85	0.21	-0.02
Region	Tibet	192.94	1.00	220.01	1.00	0.00
Central Region Western Region	Shaanxi	65.20	0.34	56.83	0.26	-0.08
	Gansu	50.04	0.26	54.85	0.25	-0.01
Eastern Region Central Region Western Region	Qinghai	127.35	0.66	132.32	0.60	-0.06
	Ningxia	89.93	0.47	100.27	0.46	-0.01
	Xinjiang	81.39	0.42	69.04	0.31	-0.11



Figure 1: Per Capita Cultural Expenditure Equalization Coefficient



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The figure indicates that among the 31 provinces in the country, only four provinces (Beijing, Heilongjiang, Anhui, and Hubei) have actual equalization coefficients slightly higher than the predicted equalization coefficients, while four provinces (Guangdong, Hunan, Chongqing, and Tibet) have actual coefficients equal to the predicted coefficients. The remaining 23 provinces have actual equalization coefficients lower than the predicted values, suggesting that the implementation of equalization policies has not significantly improved the level of per capita cultural expenditure equalization, and has, to some extent, exacerbated inequalities. Notably, the central region shows a smaller disparity, indicating the least increase in inequality, while the eastern and western regions exhibit a greater increase in inequality.

In terms of actual equalization coefficients, only Beijing, Shanghai, Tibet, and Qinghai achieve equal per capita cultural expenditure (with equalization coefficients in the range of [0.6, 1]), while all other provinces are characterized by inequality (with equalization coefficients in the range of [0, 0.59]). Overall, the per capita cultural expenditure equalization coefficient in the central region is lower than that in the eastern and western regions.

	Region	Predicted Value	Predicted Equalization Coefficient	Observed Value	Actual Equalization Coefficient	Actual Coefficient - Predicted Coefficient
	Beijing	0.53	0.53 0.70		0.71	0.01
	Tianjin	0.42	0.56	0.43	0.55	-0.01
	Hebei	0.34	0.45	0.31	0.40	-0.05
	Liaoning	0.32	0.42	0.42	0.54	0.12
	Shanghai	0.67	0.89	0.61	0.78	-0.11
Eastern	Jiangsu	0.47	0.62	0.47	0.60	-0.02
Region	Zhejiang	0.76	1.00	0.78	1.00	0.00
	Fujian	0.42	0.55	0.50	0.64	0.09
	Shandong	0.36	0.48	0.37	0.47	0.00
	Guangdong	0.45	0.60	0.49	0.63	0.03
	Hainan	0.58	0.77	0.51	0.65	-0.12
	Shanxi	0.52	0.69	0.58	0.74	0.06
	Jilin	0.44	0.58	0.45	0.58	0.00
Eastern Region Central Region Western Region	Heilongjiang	0.35	0.47	0.42	0.54	0.07
	Anhui	0.24	0.32	0.32	0.41	0.09
Region	Jiangxi	0.24	0.31	0.28	0.36	0.05
	Henan	0.30	0.39	0.30	0.38	-0.01
	Hubei	0.34	0.44	0.45	0.58	0.13
	Hunan	0.33	0.44	0.38	Actual Equalization Coefficient 0.71 0.55 0.40 0.54 0.78 0.60 1.00 0.64 0.47 0.63 0.65 0.74 0.58 0.54 0.74 0.58 0.54 0.74 0.58 0.54 0.47 0.63 0.65 0.64 0.41 0.36 0.58 0.58 0.49 0.74 0.58 0.49 0.74 0.58 0.49 0.74 0.58 0.65 0.64 0.45 0.56 0.59 0.63 0.36 0.51	0.05
	Inner Mongolia	0.52	0.69	0.58	0.74	0.05
	Guangxi	0.44	0.58	0.45	0.58	-0.01
	Chongqing	0.43	0.57	0.51	0.65	0.09
Eastern Region H Central Region () Western Region	Sichuan	0.59	0.78	0.50	0.64	-0.14
	Guizhou	0.27	0.35	0.35	0.45	0.09
	Yunnan	0.37	0.50	0.44	0.56	0.07
Region	Tibet	0.44	0.58	0.46	0.59	0.01
	Shaanxi	0.54	0.71	0.49	0.63	-0.08
	Gansu	0.41	0.54	0.28	0.36	-0.19
	Qinghai	0.43	0.57	0.51	0.65	0.08
	Ningxia	0.47	0.62	0.54	0.69	0.07
	Xinjiang	0.46	0.61	0.40	0.51	-0.10

(ii) Equalization of the Proportion of Cultural Expenditure in Fiscal Spending

 Table 2: Equalization Coefficient of the Proportion of Cultural Expenditure in Fiscal Spending





Figure 2: Equalization Coefficient of the Proportion of Cultural Expenditure in Fiscal Spending

The table and figure indicate that 11 provinces (Tianjin, Hebei, Shanghai, Jiangsu, Shandong, Hainan, Henan, Sichuan, Shaanxi, Gansu, and Xinjiang) have actual equalization coefficients lower than the predicted values, while the remaining 20 provinces have actual equalization coefficients higher than the predicted values. This suggests that the equalization policies have, to some extent, improved the equalization level of the proportion of cultural expenditure in fiscal spending. Overall, the central region shows a significant improvement in equalization, whereas the eastern and western regions exhibit relatively smaller improvements.

In terms of actual equalization coefficients, among the 31 provinces, 14 provinces (Beijing, Shanghai, Jiangsu, Zhejiang, Fujian, Guangdong, Hainan, Shanxi, Inner Mongolia, Chongqing, Sichuan, Shaanxi, Qinghai, and Ningxia) have equalization coefficients in the range of [0.6, 1], indicating that the proportion of cultural expenditure in fiscal spending is equal. The remaining provinces have equalization coefficients in the range of [0, 0.59], indicating inequality. Among these, seven provinces in the eastern region are equal, with an overall higher equalization coefficient; six provinces in the western region are equal, with an overall higher equalization coefficient; six provinces in the central region, only Shanxi Province is equal, while the other provinces are unequal, and the overall equalization coefficient is low.

(iii)Equalization of the Number of Cultural Practitioners

Table 3: Equalization Coefficient of the Number of Cultural Practitioners

	Region	Predicted Value	Predicted Equalization Coefficient	Observed Value	Observed Value Actual Equalization Coefficient	
	Beijing	13822.71	0.32	13817	0.28	-0.04
	Tianjin	5661.85	0.13	5262	0.11	-0.02
	Hebei	25345.27	0.58	24068	0.49	-0.09
	Liaoning	12384.40	0.28	11414	0.23	-0.05
Eastern Region	Shanghai	20734.10	0.47	12715	0.26	-0.22
	Jiangsu	20384.73	0.47	21421	0.44	-0.03
	Zhejiang	43681.19	1.00	49197	1.00	0.00
	Fujian	16414.81	0.38	17618	0.36	-0.02
	Shandong	25430.48	0.58	24557	0.50	-0.08
	Guangdong	19112.21	0.44	19034	0.39	-0.05
	Hainan	Predicted ValueEqualization CoefficientObserved ValueActual Equalizat Coefficient13822.710.32138170.285661.850.1352620.1125345.270.58240680.4912384.400.28114140.2320734.100.47127150.2620384.730.47214210.4443681.191.00491971.0016414.810.38176180.3625430.480.58245570.5019112.210.44190340.394508.330.1052930.1120375.130.47240270.498269.170.1983650.179605.000.2298980.2035331.060.81423380.8612812.500.29140320.2936347.250.83414450.8418580.040.43169320.34	0.11	0.00		
	Shanxi	20375.13	0.47	24027	0.49	0.02
	Jilin	8269.17	0.19	8365	0.17	-0.02
	Heilongjiang	9605.00	0.22	9898	0.20	-0.02
Central Region	Anhui	35331.06	0.81	42338	0.86	0.05
	Jiangxi	12812.50	0.29	14032	0.29	-0.01
	Henan	36347.25	0.83	41445	0.84	0.01
	Hubei	18580.04	0.43	16932	0.34	-0.08



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	Hunan	16183.08	0.37	18642	0.38	0.01
	Inner Mongolia	13097.40	0.30	12271	0.25	-0.05
	Guangxi	11106.13	0.25	12685	0.26	0.00
	Chongqing	13336.00	0.31	13435	0.27	-0.03
	Sichuan	22831.17	0.52	22110	0.45	-0.07
	Guizhou	8938.46	0.20	8614	0.18	-0.03
Western Region	Yunnan	14416.17	0.33	12909	0.26	-0.07
	Tibet	5259.83	0.12	4748	0.10	-0.02
	Shaanxi	19784.46	0.45	23750	0.48	0.03
	Gansu	14132.88	0.32	13967	0.28	-0.04
	Qinghai	3870.33	0.09	3900	0.08	-0.01
	Ningxia	2081.35	0.05	2399	0.05	0.00
	Xinjiang	8558.35	0.20	8341	0.17	-0.03



Figure 3: Equalization Coefficient of the Number of Cultural Practitioners

As shown in the figure, among the 31 provinces nationwide, 22 provinces have actual equalization coefficients lower than the predicted values, indicating that the implementation of equalization policies has had a limited effect on promoting the equalization of the number of cultural practitioners. In most provinces, the number of cultural practitioners exhibits slight inequality.

From the actual equalization coefficients, it can be observed that only three provinces Zhejiang, Anhui, and Henan exhibit equalization in the number of cultural practitioners (with equalization coefficients in the range of [0.6, 1]). The remaining provinces have varying degrees of inequality (with equalization coefficients in the range of [0, 0.59]). Overall, the eastern provinces show a higher equalization coefficient and the lowest degree of inequality, followed by the central provinces, while the western provinces exhibit the highest degree of inequality.

(iv) Equalization of the Number of Cultural Institutions

Table 4: Equalization Coefficient of the Number of Cultural Institutions

	Region	Predicted Value	Predicted Equalization Coefficient	Observed Value	Actual Equalization Coefficient	Actual Coefficient - Predicted Coefficient
	Beijing	606	0.38	570	0.25	-0.13
	Tianjin	156	0.10	155	0.07	-0.03
Eastern Degion	Hebei	1125	0.70	1162	0.51	-0.19
Eastern Region	Liaoning	482	0.30	505	0.22	-0.08
	Shanghai	393	0.25	351	0.15	-0.09
	Jiangsu	877	0.55	974	0.43	-0.12



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	Zhejiang	1546	0.96	1712	0.75	-0.21
	Fujian	676	0.42	704	0.31	-0.11
	Shandong	1305	0.81	1253	0.55	-0.26
	Guangdong	809	0.50	798	0.35	-0.15
	Hainan	121	0.08	134	0.06	-0.02
	Shanxi	731	0.46	897	0.39	-0.06
	Jilin	260	0.16	261	0.11	-0.05
	Heilongjiang	457	0.29	472	0.21	-0.08
Control Decion	Anhui	1603	1.00	2278	1.00	0.00
Central Region	Jiangxi	672	0.42	659	0.29	-0.13
	Henan	1364	0.85	1621	0.71	-0.14
	Hubei	765	0.48	713	0.31	-0.16
	Hunan	707	0.44	831	0.36	-0.08
	Inner Mongolia	505	0.32	492	0.22	-0.10
	Guangxi	393	0.25	448	0.20	-0.05
	Chongqing	853	0.53	935	0.41	-0.12
	Sichuan	1268	0.79	1248	0.55	-0.24
	Guizhou	399	0.25	373	0.16	-0.09
Western Region	Yunnan	701	0.44	594	0.26	-0.18
6	Tibet	325	0.20	249	0.11	-0.09
	Shaanxi	694	0.43	775	0.34	-0.09
	Gansu	575	0.36	568	0.25	-0.11
	Qinghai	186	0.12	178	0.08	-0.04
	Ningxia	91	0.06	93	0.04	-0.02
	Xinjiang	430	0.27	430	0.19	-0.08



The figure indicates that the actual equalization coefficients of cultural institutions in all 30 provinces nationwide are lower than the predicted values, suggesting that the effectiveness of the equalization policies is generally limited and that they have exacerbated inter-provincial inequality in the number of cultural institutions to some extent. Among these, the difference in coefficients between the eastern and western regions is relatively large, indicating a greater degree of exacerbation of inequality; conversely, the difference in coefficients in the central area is relatively small, indicating a lesser degree of exacerbation.

From the actual equalization coefficients, only the number of cultural institutions in Zhejiang, Anhui, and Henan is equalized, while the remaining 28 provinces exhibit inequality. Specifically, 8 out of 11 provinces in the eastern region, 7 out of 8 provinces in the central region, and 5 out of 12 provinces in the western region have equalization coefficients exceeding 0.2. This demonstrates that the central region has the lowest degree of inequality, followed by the eastern region, while the region of the west exhibits the highest.



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(v) Equalization of Cultural Activity Sessions

	Region	Predicted Value	Predicted Equalization Coefficient	Observed Value	Actual Equalization Coefficient	Actual Coefficient Predicted Coefficient
	Beijing	69359	0.18	62733	0.13	-0.05
	Tianjin	25159	0.06	18858	0.04	-0.03
Table 5: Equalization Coefficient of Cultural Region Predicted Value Predicted Equalization Coefficient Beijing 69359 0.18 Tianjin 25159 0.06 Hebei 112480 0.29 Liaoning 35487 0.09 Shanghai 88448 0.23 Jiangsu 102233 0.26 Zhejiang 261697 0.67 Fujian 7038 0.02 Shandong 189593 0.49 Guangdong 89004 0.23 Hainan 11340 0.03 Shanxi 67377 0.17 Jilin 13220 0.03 Heilongjiang 11482 0.03 Central Anhui 389282 1.00 Region Jiangxi 60126 0.15 Henan 362483 0.93 Hubei 49796 0.13 Hunan 81475 0.21 Inner 43750 0.11	110665	0.23	-0.06			
	Liaoning	Predicted Predicted CoefficientPredicted Equalization CoefficientObserved ValueActual Equalization CoefficientCoefficient693590.18627330.13251590.06188580.041124800.291106650.23354870.09409550.08884480.23782110.161022330.261149020.242616970.673432190.7070380.021043630.211895930.491179310.24890040.23921530.19113400.03109840.02673770.171050340.22132200.03187770.04114820.03168740.033892821.004791260.98601260.15603940.123624830.934884201.00497960.13556150.11814750.21724180.15437500.11340660.07260710.07281120.06980340.251057390.221288560.331164670.24251510.06205560.04745740.19602060.1296950.0284480.02430850.11519130.11325220.08401680.0853180.0184300.02 <td>-0.01</td>	-0.01			
T .	Shanghai	88448	Predicted Equalization Coefficient Observed Value Actual Equalization Coefficient Actual Coefficient 0.18 62733 0.13 -0.0 0.06 18858 0.04 -0.0 0.29 110665 0.23 -0.0 0.29 110665 0.23 -0.0 0.23 78211 0.16 -0.0 0.26 114902 0.24 -0.0 0.67 343219 0.70 0.02 0.49 117931 0.24 -0.2 0.49 117931 0.24 -0.2 0.23 92153 0.19 -0.0 0.17 105034 0.22 0.0 0.03 16874 0.03 0.00 1.00 479126 0.98 -0.0 0.15 60394 0.12 -0.0 0.13 55615 0.11 -0.0 0.21 72418 0.15 -0.0 0.13 55615 0.11 -0.0	-0.07		
Eastern	Jiangsu	102233	0.26	114902	0.24	-0.03
Region	Zhejiang	261697	0.67	343219	0.70	0.03
	Fujian	7038	0.02	104363	0.21	0.20
	Shandong	189593	0.49	117931	0.24	-0.25
	Guangdong	89004	0.23	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	-0.04	
	Hainan	11340	0.03	10984	0.02	-0.01
	Shanxi	67377	0.17	105034	0.22	0.04
	Jilin	13220	0.03	18777	0.04	0.00
	Heilongjiang	11482	0.03	16874	0.03	0.01
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	0.98	-0.02				
Region	Jiangxi	60126	0.15	60394	0.12	-0.03
	Henan	362483	0.93	488420	1.00	0.07
Eastern Region Central Region Western Region	Hubei	49796	0.13	55615	0.11	-0.01
	Hunan	81475	0.21	72418	Vity Desirents red Actual Equalization Coefficient Co 3 0.13 Co 5 0.23 Co 5 0.08 I 1 0.16 Co 2 0.24 9 9 0.70 Go 3 0.21 Go 4 0.02 Go 4 0.02 Go 4 0.02 Go 4 0.03 Go 5 0.11 Go 8 0.15 Go 6 0.07 Go 2 0.06 Go 3 0.11 Go 6 0.02 Go 7 0.06 </td <td>-0.06</td>	-0.06
	Inner Mongolia	43750	0.11	34066	0.07	-0.04
	Guangxi	26071	0.07	28112	0.06	-0.01
Eastern Region Central Region Western Region	Chongqing	98034	0.25	105739	0.22	-0.04
	Sichuan	128856	0.33	116467	0.24	-0.09
	Guizhou	25151	0.06	20556	0.04	-0.02
Eastern Region	Yunnan	74574	0.19	60206	0.12	-0.07
Region	Tibet	9695	Predicted Value Predicted Equalization Coefficient Observed Value Actual Equalization Coefficient 69359 0.18 62733 0.13 25159 0.06 18858 0.04 112480 0.29 110665 0.23 35487 0.09 40955 0.08 88448 0.23 78211 0.16 102233 0.26 114902 0.24 261697 0.67 343219 0.70 7038 0.02 104363 0.21 189593 0.49 117931 0.24 89004 0.23 92153 0.19 11340 0.03 10984 0.02 67377 0.17 105034 0.22 13220 0.03 18877 0.04 11482 0.03 16874 0.03 389282 1.00 479126 0.98 60126 0.15 60394 0.12 362483 0.93 488420 1.00	-0.01		
Eastern Region 2 G G Central Region N C Western Region	Shaanxi	43085	0.11	51913	0.11	0.00
	Gansu	32522	0.08	40168	0.08	0.00
	Qinghai	5318	0.01	8430	0.02	0.00
	Ningxia	12654	0.03	9013	0.02	-0.01
	Xinjiang	30983	0.08	30607	0.06	-0.02





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The figure indicates that only six provinces (Zhejiang, Fujian, Shanxi, Jilin, Henan, and Qinghai) have actual equalization coefficients for cultural activity sessions that exceed the predicted values, while four provinces (Heilongjiang, Tibet, Shaanxi, and Gansu) have actual equalization coefficients equal to the predicted values. The remaining 21 provinces are all below the predicted values, indicating that the equalization policies are ineffective in promoting the equalization of cultural activity sessions. Overall, the difference in coefficients in the central and western regions is smaller compared to the eastern region, suggesting a lesser degree of exacerbation of inequality.

From the actual equalization coefficients, all 28 provinces, except for Zhejiang, Anhui, and Henan, exhibit inequality in cultural activity sessions (with equalization coefficients falling within the range of [0, 0.59]). In general, the equalization coefficients in the western region are lower than those in the eastern and central regions, indicating a greater degree of inequality. (*vi*) Equalization of Cultural Activity Attendance

	Table 6: Equalization Coefficient of Cultural Activity Attendance					
	Region	Predicted Value	Predicted Equalization Coefficient	Observed Value	Actual Equalization Coefficient	Actual Coefficient - Predicted Coefficient
	Beijing	3476	0.12	3131	0.08	-0.04
	Tianjin	2435	0.08	2320	0.06	-0.02
Beijing 3476 Tianjin 2435 Hebei 10508 Liaoning 4659 Shanghai 8752 Jiangsu 17587 Zhejiang 29299 Fujian 8181 Shandong 14108 Guangdong 17398 Hunan 1850 Shanxi 5649 Jilin 2016 Heilongjiang 3728 Anhui 15350 Jiangxi 6860 Henan 24389 Hubei 8042 Hainan 8438 Inner 3564 Guangxi 5092 Chongqing 5678 Sichuan 14392 Guizhou 3206	0.36	9883	0.26	-0.10		
	Liaoning	4659	0.16	4426	0.12	-0.04
	Shanghai	8752	0.30	7863	0.21	-0.09
Eastern Region	Jiangsu	17587	0.60	19250	0.51	-0.09
e	Zhejiang	29299	1.00	34153	0.90	-0.10
	Fujian	8181	0.28	7538	0.20	-0.08
	Shandong	14108	0.48	13859	0.37	-0.12
	Guangdong	17398	0.59	15918	0.42	-0.17
	Hunan	1850	0.06	1312	0.03	-0.03
	Shanxi	5649	0.19	7166	0.19	0.00
	Jilin	2016	0.07	2193	0.06	-0.01
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	0.09	-0.03				
	0.48					
Central Region	Jiangxi	6860	0.23	6478	0.17	-0.06
Central Region	Henan	24389	0.83	19668	0.52	-0.31
	Hubei	8042	0.27	7929	0.21	-0.07
	Hainan	8438	ed ValuePredicted Equalization CoefficientObserved ValueActual Equalization Coefficient4760.12 3131 0.084350.0823200.065080.3698830.266590.1644260.127520.3078630.2175870.60192500.5179991.00341530.901810.2875380.201080.48138590.3773980.59159180.428500.0613120.036490.1971660.190160.0721930.067280.1335940.093500.52379101.008600.2364780.174380.2993090.255640.1231640.080920.1747660.136780.1970650.1913220.49108100.292060.1131360.088250.2073200.1943920.49108100.292060.1131360.088250.2073200.194350.024870.013220.3298340.263330.026540.024090.038890.0241000.0925030.07	-0.04		
	Inner	3564	0.12	3164	0.08	-0.04
	Mongolia	5000	0.17	17.00	0.12	0.05
	Guangxi	5092	0.17	4/66	0.13	-0.05
	Chongqing	5678	0.19	/065	0.19	-0.01
	Sichuan	14392	0.49	10810	0.29	-0.21
	Guizhou	3206	0.11	3136	0.08	-0.03
Western Region	Yunnan	5825	0.20	/320	0.19	-0.01
	libet	4/9	0.02	48/	0.01	0.00
	Shaanxi	9322	0.32	9834	0.26	-0.06
	Gansu	5385	0.18	5885	0.16	-0.03
	Qinghai	633	0.02	654	0.02	0.00
	Ningxia	908	0.03	889	0.02	-0.01
	Xinjiang	2610	0.09	2503	0.07	-0.02





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As shown in the figure, among the 31 provinces nationwide, except Shanxi, Anhui, Chongqing, and Qinghai, 27 provinces have actual equalization coefficients that are lower than the predicted coefficients, indicating that the equalization policies have had a limited effect on cultural activity attendance, with the majority of provinces exhibiting inequality in this regard. Among these, most western provinces show smaller differences, indicating a lesser degree of exacerbation of inequality, while the central and eastern regions exhibit larger differences and greater exacerbation of inequality.

From the actual equalization coefficients, only Zhejiang and Anhui demonstrate equalization in cultural activity attendance (with equalization coefficients falling within the range of [0.6, 1]), while the remaining 29 provinces show inequality (with equalization coefficients falling within the range of [0, 0.59]). Overall, the equalization coefficients in the eastern and central regions are higher than in the western region, indicating a lower degree of inequality compared to the western region.

3. Factors Affecting the Effectiveness of Equalization Policies

3.1 Selection of Influencing Factors

Regarding the influencing factors of the effectiveness of equalization policies for public cultural services, the literature frequently mentions economic development level, fiscal decentralization, government emphasis, urbanization level, and educational attainment. Based on relevant literature and the indicator system established for evaluating policy effects, this paper selects economic development level (Yang & Xu, 2013) government emphasis (Yang, Zhao, & Su, 2016), and educational attainment (Song, 2019; Wu, 2013) as the main factors influencing the effectiveness of equalization policies for analysis. The specific variables are as follows: the explanatory variable, economic development level, is represented by the GDP of each province Liu, Xin, & Zhou, 2019; the degree of government emphasis on public cultural services is represented by the proportion of public cultural service expenditure to total public service expenditure(Yang, Zhao, & Su, 2016); and educational attainment is indicated by the illiteracy rate(Song, Qu, & Lv, 2019), which is the proportion of individuals who have never attended primary school among the population aged six and older. The explained variable is derived from cross-sectional data on the indicators of the effectiveness of public cultural service equalization in each province for 2016 (limited to data available in the yearbook, only relevant data from 2016 is selected). Factor analysis is conducted to extract common factors from six effectiveness indicators, and a comprehensive score is calculated. This comprehensive score is then used to calculate the equalization coefficient for public cultural services as the dependent variable.

3.2 Empirical Analysis

3.2.1 Factor Analysis

(i) Assessment of the Suitability for Factor Analysis of Indicators for the Effectiveness of Public Cultural Service Equalization

Using SPSS 24 software, KMO measurement, and Bartlett's test were conducted on the data, yielding the test results for the indicators in 2016.

KMO Sampling Adequacy Mea	.762	
Bartlett's Test of Sphericity	Approximate Chi-Square	191.015
	Degrees of Freedom (df)	15
	Significance (Sig.)	.000

Table 7: KMO Measurement and Bartlett's Test

It is evident that the KMO statistic has a measured value of 0.762 > 0.7, indicating a strong correlation among the variables, thus meeting the requirements for factor analysis; the results of Bartlett's test of sphericity show a significance probability of P = 0.000 < 0.05, suggesting that the data exhibit a spherical distribution, making it suitable for factor analysis.

(ii) Through SPSS, the common factor variance and the total variance explained were obtained, which helped determine the common factors to be extracted.

	Initial	Extraction	
Per Capita Cultural Expenditure	1.000	.775	
Ratio of Cultural Expenditure to Fiscal Spending	1.000	.834	
Number of Cultural Industry Employees	1.000	.958	
Number of Cultural Institutions	1.000	.954	
Number of Cultural Activities	1.000	.888	
Number of Participants in Cultural Activities	1.000	.929	

Extraction Method: Principal Component Analysis.

Common factor variance indicates the extent to which the common factor represents the original variables. As shown in the table, the extraction values of the common factor for all original variables are above 70%, suggesting that after extracting common factors through factor analysis, there is minimal information loss from the original variables, indicating a high efficiency of the factor analysis.



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Table 9: Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)
1	3.893	64.889	64.889	3.893	64.889	64.889	3.774	62.907	62.907
2	1.444	24.059	88.948	1.444	24.059	88.948	1.562	26.040	88.948
3	0.432	7.207	96.154						
4	0.109	1.815	97.969						
5	0.080	1.337	99.306						
6	0.042	0.694	100.000						

Extraction Method: Principal Component Analysis.

The total variance explained indicates the contribution rate of factors in explaining the variables, which can be understood as the number of common factors required to sufficiently represent the variables. As shown in Table 3, the eigenvalues of the first two common factors are 3.893 and 1.444, both greater than 1, while the eigenvalue of the third common factor is 0.432, which is less than 1. The eigenvalues reflect the degree of influence that common factors have on the original variables; the first two common factors have a significant impact on the original variables, while the remaining four common factors show no notable influence. Furthermore, the cumulative percentage of the first two common factors reaches 88.948%, adequately representing the original variables.

(iii) Based on the rotated component matrix, clarify the meanings of the common factors and assign appropriate names to these factors.

Table 10: Rotated Component Matrix

	Component		
	1	2	
Per Capita Cultural Expenditure	302	.827	_
Ratio of Cultural Expenditure to Fiscal Spending	.092	.908	
Number of Cultural Industry Employees	.977	062	
Number of Cultural Institutions	.956	200	
Number of Cultural Activities	.937	094	
Number of Participants in Cultural Activities	.964	020	
Extraction: Principal Component Analysis			_

Rotation: Varimax with Kaiser Normalization

The first common factor F1 shows high loadings on the number of cultural industry practitioners, the number of cultural institutions, the number of cultural events, and the number of participants in cultural activities. The first two indicators represent the human resources invested in public cultural services, while the latter two indicators reflect the efficiency of public cultural services. Therefore, F1 is named the Human Resources and Efficiency Factor. The second common factor F2 exhibits high loadings on per capita cultural expenditure and the proportion of cultural expenditure in total fiscal spending, reflecting the funding situation of public cultural services, and is therefore named the Funding Factor.

(iv) Calculate the comprehensive scores for public cultural services in each province based on the contribution rates of the common factors, and convert these scores to a 100-point scale.

The scores for common factors F1 and F2 are derived from the sum of the products of their component coefficients and the corresponding indicator values. Based on the explained variance contributions of F1 and F2 presented in the total variance explanation table, weights are assigned to each common factor, resulting in the calculation formula for the comprehensive score: Comprehensive Score = (F1 Score \times F1 Contribution Rate) + (F2 Score \times F2 Contribution Rate). As shown in the following formula: $\Sigma F = 0.62907 \times F1 + 0.26040 \times F2$

Because comprehensive scores can be both positive and negative, the resulting normalization coefficients may also exhibit both signs, potentially affecting the coefficients of the multiple linear regression model. Therefore, the comprehensive scores are converted to a 100-point scale¹. The highest score of 100 serves as the baseline value, with all percentage scores divided by 100 to yield the normalization coefficients.

	Comprehensive score	Converted percentage score		Comprehensive score	Converted percentage score
Beijing	0.21	30.92	Hubei	-0.14	20.12
Tianjin	-0.55	7.48	Hunan	-0.22	17.65
Hebei	-0.15	19.81	Guangdong	0.25	32.15
Shanxi	0.37	35.85	Guangxi	-0.41	11.79
Inner	0.02	25.06	Hainan	-0.49	9.33

T 11 44 C		. 1	
Table 11: Con	mprehensive score	. converted	percentage score

Conversion formula: Percentage score = (Comprehensive score + B) × A, where A = 99 / (Maximum comprehensive score - Minimum comprehensive score) and B = (1/A) - Minimum comprehen



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Mongolia					
Liaoning	-0.46	10.25	Chongqing	0.09	27.21
Jilin	-0.55	7.48	Sichuan	0.34	34.93
Heilongjiang	-0.54	7.79	Guizhou	-0.76	1.00
Shanghai	0.42	37.39	Yunnan	-0.28	15.80
Jiangsu	0.39	36.47	Tibet	-0.18	18.89
Zhejiang	2.45	100.00	Shaanxi	0.13	28.45
Anhui	1.58	73.17	Gansu	-0.64	4.70
Fujian	0.05	25.98	Qinghai	-0.36	13.34
Jiangxi	-0.65	4.39	Ningxia	-0.43	11.18
Shandong	0.12	28.14	Xinjiang	-0.56	7.17
Henan	0.95	53.74			

3.2.2 Multiple linear regression

When multiple independent variables simultaneously influence a dependent variable, a multiple linear regression model is established to clarify the direction and extent of each independent variable's impact on the dependent variable: $Y = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3$. Here, Y represents the normalization coefficient, x_1 denotes the Gross Domestic Product (GDP), x_2 indicates the proportion of public cultural service expenditure to total public service expenditure, x_3 represents the illiteracy rate, b_0 represents the illiteracy rate, b_i is the regression coefficient of x_i , the change in Y caused by an increase of 1 unit in x_i , while holding other independent variables constant. The analysis was conducted using SPSS 24, with the results presented as follows.

Table 12: Model FI	Table	12:	Model	Fi
--------------------	--------------	-----	-------	----

Model	R	R-squared	Adjusted R-squared	Standard Error of Estimate	Durbin-Watson
().822a	0.676	0.640	12.58200	1.886

a. Predictors: (Constant), Illiteracy Rate, GDP, Proportion of Public Cultural Service Expenditure to Total Public Service Expenditure

b. Dependent Variable: Comprehensive Score

1

As shown in Table 12, the adjusted coefficient of determination, denoted as adjusted R^2 =0.64>0.6, indicates that the model demonstrates a satisfactory goodness of fit to the data, with the model equation explaining 64% of the variance in the original data. The Durbin-Watson statistic, DW = 1.886 \approx 2, suggests that there is no evidence of serial correlation in the model, implying that the errors are independent of the independent variables.

	Table 13: Analysis of Variance (ANOVA)								
	Model	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance			
1	Regression	0.893	3	0.298	18.813	.000b			
	Residual	0.427	27	0.016					
	Total	1.321	30						
a. Depend	ent Variable: Composite Score								

b. Predictors: (Constant), Illiteracy Rate, GDP, Proportion of Public Cultural Service Expenditure to Total Public Service Expenditure

Based on the results presented in the analysis of the variance table, the significance level (Sig.) of the model is 0 < 0.05, leading to the rejection of the null hypothesis that none of the independent variables affect the dependent variable. This indicates that at least one independent variable significantly impacts the dependent variable. However, it remains uncertain whether all independent variables have a significant effect on the dependent variable, necessitating significance tests for each independent variable.

From the coefficient table below, we further derive the unstandardized coefficients, standard errors, significance of the t-tests, and collinearity statistics. Notably, the significance level (Sig.) for the t-tests of the three independent variables is 0.000, indicating that all independent variables have a significant impact on the dependent variable and can be included in the model. The VIF values for all independent variables are < 10, suggesting that there is no multicollinearity among the independent variables, which reflect different aspects and cannot be considered equivalent. Using the coefficients of the independent variables, the multiple linear regression equation is formulated as:

Y = 2.243	$+ 0.001x_1$	$+ 0.072x_2 -$	$-2.754x_3$
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		-	Table 1	4: Model Coef	ficients			
Model		Unstandar	dized Coefficients	Standardized Coefficients	t	Significance	Collinearity S	Statistics
		В	Standard Error	Beta			Tolerance	VIF
1	(Constant)	2.243	0.402		5.579	.000		
	x_1	0.001	0.000	0.576	5.205	.000	.977	1.023
	<i>x</i> ₂	0.072	0.012	1.158	6.025	.000	.324	3.083
	<i>x</i> ₃	-2.754	0.490	-1.078	-5.616	.000	.325	3.072

a. Dependent Variable: Composite Score



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Figure 7: Histogram of Standardized Residuals

As shown in the figure above, the majority of standardized residuals are distributed within the range of [-2, 2], indicating that the error terms follow a normal distribution, thus validating the normality assumption of the model.

3.2.3 Analysis Results

In summary, the model for determining the factors influencing the effectiveness of public cultural service equalization policies is as follows:

$Y = 2.243 + 0.001x_1 + 0.072x_2 - 2.754x_3$

It can be observed that, x_1 Gross Domestic Product (GDP) and x_2 the proportion of public cultural service expenditure to total public service expenditure both have a positive effect on Y, while x_3 the illiteracy rate has a negative effect on Y. The absolute value of the coefficient for the illiteracy rate is the largest, indicating that it has the greatest impact on the effectiveness of public cultural service equalization policies. The absolute value of the coefficient for public cultural services. In contrast, the absolute value of the GDP coefficient is relatively small, suggesting that GDP has a comparatively minor effect on the effectiveness of public cultural service equalization policies.

4. Main Conclusions and Policy Recommendations

4.1 Research Conclusions

The effectiveness of public cultural service equalization policies is not particularly prominent. To some extent, these policies have promoted the inter-provincial equalization of cultural expenditures as a proportion of fiscal spending; however, disparities remain in per capita cultural expenditures, the number of cultural professionals and institutions, and the frequency and attendance of cultural activities across provinces. Implementing equalization policies in the central region has shown relatively better results, while the effects in the eastern and western areas are weaker. Overall, after the implementation of equalization policies, the east region exhibits the highest level of public cultural service equalization, followed by the central region, with the western region having the lowest level of equalization. The level of education (illiteracy rate) has the most significant impact on the level of public cultural service equalization, followed by the government's emphasis (the proportion of public cultural service expenditure), and lastly, economic development level (Gross Domestic Product, GDP).

4.2 Policy Recommendations

Based on the evaluation conclusions of the equalization policies and the factors influencing the level of equalization, the following recommendations are proposed to improve public cultural service equalization.

4.2.1 Enhance Public Cultural Literacy

Firstly, it is essential to ensure that there are sufficient public school placements within the scope of compulsory education, which can be supported by encouraging social charitable organizations to establish public welfare schools. Given the critical role of the illiteracy rate in public cultural service equalization, provinces with high levels of public cultural service should maintain the number of public school placements at the compulsory education stage, while provinces with lower levels should either increase the number of public schools or expand available placements. Additionally, efforts should be made to guide social charitable



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organizations in building public welfare schools. Furthermore, the importance of education should be widely promoted, enhancing public awareness of education and improving cultural literacy.

Secondly, cultural activities should be conducted in a planned manner to raise public awareness. Utilizing public cultural service resources such as libraries and cultural centers, cultural activity plans should be developed to increase public recognition and participation in these services. Regions with disparities should make full use of public cultural service resources, including libraries, cultural centers, and museums, to formulate plans for cultural activities, mobilizing various cultural non-profit organizations to collaboratively conduct public cultural events. At the same time, it is crucial to guide different public cultural service entities to engage in cultural activities within communities, such as "mobile libraries" and "mobile cultural centers," to promote public cultural services and cultivate cultural literacy through these activities.

4.2.2 Increase Government Investment and Strengthen the Position of Public Cultural Services

First, it is essential to improve the financial system and increase government investment in public cultural services. Due to limitations in local fiscal revenue, the per capita investment in cultural services varies significantly across regions. It is recommended to enhance the financial system by shifting the focus from economic development to the importance of public cultural services. At the same time, emphasis should be placed on the equalizing effect of the transfer payment system. Special transfer payments for public cultural services should be implemented in provinces with low fiscal revenue, and supervisory mechanisms should be established to enhance the effectiveness of the use of these special funds.

Second, the proportion of public cultural service expenditures within the total public service spending should be increased. The government should recognize the important role of public cultural services in the overall public service framework. When preparing the fiscal budget, it is advisable to appropriately raise the expenditure allocated to public cultural services, thereby increasing its share of total public service expenditures. Efforts should be made to ensure that the growth rate of public cultural service expenditures is not lower than the growth rates of total public service expenditures and local fiscal revenues.

4.2.3 Promote Coordinated Economic Development and Reduce Regional Disparities

Economically disadvantaged regions should enhance regional infrastructure development, actively promote the crossregional flow of production factors, and implement preferential policies to attract investment. It is crucial to identify localized drivers of economic growth and develop advantageous industries tailored to the specific context. Conversely, economically developed regions should fulfill their support obligations to economically lagging areas by guiding the flow of production resources into these regions and sharing experiences of economic development among governments and enterprises. Additionally, encouraging and guiding private capital to play a role in public cultural services through measures such as tax reductions can significantly improve the effectiveness of public cultural services.

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