

ORIGINAL RESEARCH ARTICLE

The impact of cultural diversity and economic growth on the equalization of public cultural services——Empirical test based on spatial econometric model

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ABSTRACT

The 13th Five Year Plan of the National Basic Public Service System plays an important role in promoting the equalization of basic public services in urban and rural areas. Based on the panel data of 242 prefecture level cities in 30 provinces of China from 2008 to 2018, this paper uses the spatial econometric model for empirical analysis. The study finds that the direct effect of cultural diversity on the equalization of public cultural services is negative and significant, that is, cultural diversity hinders the equalization of public cultural services in the region; the overall effect of economic growth on the equalization of public cultural services is positive and significant, and economic growth is indeed conducive to the promotion of public cultural services equal development in the region. Based on this, it is proposed that local governments should establish a differentiated supply system of public cultural products to effectively integrate local cultural resources, talents, volunteers and social organizations. We will increase financial investment in public cultural services and use government purchases to promote the gradual equalization of public cultural services in rural areas, border ethnic areas and urban rural fringe areas.

Keywords: cultural diversity; economic growth; public cultural services; equalization

1. Introduction

The “culture benefiting the people project” proposed at the 19th National Congress of the Communist Party of China puts forward new requirements for the construction of rural civilization and public cultural service system, and points out the direction for promoting the equalization of public cultural services in China. In recent years, the academic research on the equalization of public cultural services has mainly focused on the core

issues of “equalization of basic public cultural services” such as related theories, equalization measures and service systems. Sun Zhangyin ^[1] pointed out that the research on “equalization of basic public cultural services” mainly focuses on concept definition, theoretical discussion, current situation, implementation obstacles, influencing factors, construction experience and implementation path. In terms of research content, zhangyaqi, chenhanmei and others ^[2] believe that the research content of equalization of basic public cultural services at the macro level includes service subjects,

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evaluation indicators and equalization goal setting, and at the micro level includes the development of public cultural facilities, cultural activities, financial system construction and digitalization. In the process of realizing the equalization of public cultural services, economic factors, policy and legal factors, and cultural factors are the main obstacles to the equalization of public cultural services, including stable regional and ethnic factors, age factors that are not easy to change, and active religious beliefs, cultural literacy, habits and personality determine the demand characteristics of basic public cultural services, become an important factor influencing the low or unbalanced level of basic public cultural services [3]. Therefore, zeng Ming and others [4] proposed that the urgent task in China is to enhance the financial self-sufficiency of local governments, so as to effectively promote the equalization of public cultural services. The above research results clearly show the basic research status, implementation obstacles, research content and process of the equalization of basic public cultural services in China, and also put forward specific feasible suggestions for the equalization of public cultural services.

At present, the domestic research results on cultural diversity, economic growth and the equalization of public cultural services are limited. Through combing the existing literature, it is found that some scholars focus on the impact of cultural diversity on the equalization of public cultural services. Lianglixin (2014) [5] pointed out that the obstacles to the equalization of public culture in ethnic areas lie in the lagging economic development, cultural diversity and diaspora. Qu Ruxiao and Zeng Yanping (2015) [6] tested the impact of changes in cultural diversity on China's trade in cultural products and concluded that changes in cultural diversity and trade in cultural products are a dynamic process of mutual influence and interaction. In the related research on economic growth and equalization of public cultural services, on the one hand, it mainly focuses on the measurement of the level of equalization of public cultural services.

For example, wangluozhong and Li Fan [7] used the statistical data since the eleventh five years plan to measure the relative gap in the equalization of basic public cultural services in 31 provinces of China. On the other hand, it discusses the variable relationship between economic growth and the equalization of public cultural services. For example, mao Yanbing and Han Yuyun [8] verified that the level and quality of public cultural services are closely related to economic development by empirical research methods. In addition, regional culture, nationality, cultural tradition, ideology and other factors are also key variables affecting economic growth. For example, the recent research results of Ye Dezhu and Shi Shuxing (2016) [9] show that there is a significant positive correlation between regional cultural differences and regional economic growth. Modern economic growth and cultural change are inseparable. Cultural diversity in society has an impact on the choice of diversified production and lifestyle, thus stimulating the “organic growth” of the economy [10]. These findings show that cultural diversity and economic factors can have an important impact on the equalization of public cultural services in different ways.

Based on the existing research results and related theories, the research focus of this paper is to explore how to solve the problem of the last kilometer of public cultural services with the development of urban-rural integration? What is the interactive relationship between the economic growth of a region, the cultural diversity of ethnic areas and the equalization of public cultural services? These are practical problems that need to be solved urgently in the process of promoting the equalization of public cultural services. In terms of research methods, berliant and Weiss (2013) proposed that when the investigated variables are spatially correlated, the results may be biased by using the traditional OLS estimation. In this study, the dialect diversity and economic growth among different regions are also likely to have a certain spatial correlation, and the use of spatial measurement method can well overcome this problem. Based on

this, this paper uses the spatial econometric model to explore the internal interaction logic between cultural diversity, economic growth and the equalization of public cultural services based on the public goods theory and the new public management theory. From the perspective of cultural diversity and economic growth, clarify the relationship between regional cultural factors, economic factors and the equalization of public cultural services, in order to provide feasible policy suggestions for promoting the equalization of public cultural services in China.

2. Theoretical basis

From the perspective of public product theory, the content of public cultural products is closely related to cultural elements and institutional elements. Public cultural products have their own particularity. From the perspective of culture, culture mainly includes attitude preference, ideology, ethics, etc. ^[11]. In sociology, fei Xiaotong believes that culture is indivisible and an organic whole, which can be divided into three levels: production and life tools, organizations and values. The theoretical school of new institutional economics puts forward that culture, morality and custom belong to informal system, and the cultural function should be closely combined with the local economy, geography, history and human environment. Therefore, public cultural services are also influenced by such factors as culture, morality, customs, attitude preferences, ideology, organization and values.

In the field of public management, the new school of public management theory represented by Denhart believes that: first, the role of the government should change from “bureaucratic management” to “people’s livelihood management”. Second, the government should focus on long-term social interests and straighten out the relationship among the government, citizens and the market. The primary premise for realizing the equalization of basic public cultural services is that the government should change its functions and roles, straighten out the relationship between the government, citizens

and the market, and pay attention to long-term social benefits. Thirdly, the new public management theory points out that the main function of the government is the supply of public services and the effective allocation of public resources. It also introduces a competition mechanism in the public sphere and effectively improves the supply efficiency of public goods according to the efficiency principle of the transaction cost theory. The government’s competition concept, efficiency principle and effective allocation of public resources have laid an important theoretical foundation for promoting the equal development of public cultural services.

3. Variable interpretation and model setting

3.1. Data source and variable interpretation

Based on the reliability and accessibility of the research samples, the panel data of 242 prefecture level cities in 30 provinces in China from 2008 to 2018 are selected as the research samples (the samples do not include Hong Kong, macao, taiwan and Tibet), and the spatial econometric model is used for empirical analysis. Explore the interaction mechanism between cultural diversity, economic growth and the equalization of public cultural services. The index data in this paper are from the statistical yearbook of Chinese cities and the statistical yearbook of various provinces and municipalities directly under the central government over the years. The data processing and empirical research are completed by stata14.

According to the research purpose, the explanatory variable of the article is the equalization of public cultural services. As for the selection of indicators, pengleiting, piyanfang (2018) ^[12] and fucaiwei, zhangweifeng (2018) ^[13] selected four first-class indicators of public cultural service products, talents, financial investment and infrastructure, and used empirical methods to verify each indicator. Drawing on their research results, this paper selects

the number of public books per capita as a measure of the equalization of public cultural services, including the number of books collected in public libraries, cultural centers and cultural stations. Cultural diversity and economic growth are explanatory variables. In different regions, cultural diversity reflects different cultural traditions. Dialect has become a tool for people to communicate in a specific region and an important carrier of regional culture. In the processing of cultural diversity variables, the administrative divisions of prefecture level cities are taken as the analysis unit, the dialect diversity data in the dialect database constructed by xuxianxiang et al. (2015)^[14] are used, the dialect diversity index of the city is taken as the measurement index of cultural diversity, and the dialect diversity index is processed by the processing method of xuxianxiang et al. (2015)^[13]. In order to reflect the economic growth variables more objectively, the per capita GDP growth rate is used as the proxy measurement variable of economic growth by referring to the research results of Jiang Wei (2019)^[15] on market-oriented reform, opening up and regional economic growth.

Since the equalization of public cultural services is the result of the joint action of many factors, in order to objectively reflect the interaction mechanism between cultural diversity and economic growth on the equalization of public cultural services, the following control variables are introduced into the model. The research of Zhang Bo and fan Chenchen (2018)^[16] shows that cultural diversity is affected by factors such as economic growth, technology diffusion and opening up. At the same time, based on China's vast territory, religious diversity, the distribution characteristics of multi-ethnic groups living together in large and small communities, as well as the cultural differences between different ethnic languages and customs, the clan system and ethnic composition formed by blood and geography may have an impact on cultural

diversity. In areas where ethnic minorities are concentrated, the local dialects may be more abundant. To sum up, nationality and clan system are introduced into the equation as control variables. Some scholars also pointed out that the unemployment rate is closely related to the equalization of basic public services. In addition, lujuan and Li Tuo (2016)^[17] believe that culture and education is a key influencing variable to measure the equalization of public services. Therefore, the unemployment rate and primary education are introduced as control variables. In terms of variable processing, we use the research results of lujuan and Li Tuo (2016)^[17] for reference to measure primary education by the number of primary schools per 10000 people; ethnic variables are measured by the proportion of ethnic minority population. The data of ethnic minority population are from the fifth national census in 2010. With reference to Zhang Bo and fan Chenchen's treatment of the clan system, the total number of genealogies in each city is sorted out according to the "Chinese Genealogy: Shanghai Library genealogy knowledge service platform" to measure the clan system. In the literature on the equalization of public cultural services, wei Heqing^[18] believed that the equalization difference in China's regions was the main reason for the non equalization of public cultural services between the East, the middle and the West. Zhangyaqi et al. pointed out that in the research of public culture in ethnic minority areas, we should pay attention to the equal development of basic public cultural services in ethnic minority areas and border areas. Therefore, two regional dummy variables, eastern and western regions, ethnic regions and non ethnic regions, are set respectively. In terms of variable processing, cities in ethnic autonomous regions are assigned 1, otherwise 0. Taking the central region as the reference group, the eastern region is assigned 1, otherwise 0, and the western region is assigned 1, otherwise 0. The explanation of each variable is shown in **Table 1**.

Table 1. Variable definition and description

Variable type	Variable name	Variable symbol	Variable description
Explained variable	Equalization of public cultural services	Cul	Number of public books per capita
Explanatory variable	Cultural diversity	Diversity	Dialect diversity index
	Economic growth	G	Per capita GDP growth rate
	Primary education	Pri	Number of primary schools per 10000 People
	Unemployment rate	Unemployment	Urban unemployment rate
Control variable	Clan system	Genealogy	Number of genealogies
	Nation	Minority	Proportion of minority population
	West	West	The western city is assigned as 1, otherwise it is 0
	East	East	The eastern city is assigned as 1, otherwise it is 0
	Ethnic Regions	Nation	The value of cities in ethnic regions is 1, otherwise it is 0

3.2. Spatial model settings

Through combing the relevant literature, it is found that in the previous econometric model setting, it is based on the research assumptions that regions are independent of each other, but ignores the interaction between regions. However, using spatial econometric model for analysis can effectively overcome these shortcomings. In this study, the economic development, national habits and language environment between different regions will be affected by their neighboring regions. Therefore, it is appropriate to use spatial econometric model for evaluation. In terms of model selection, the initial model is set as the spatial Dobbins model by referring to the setting of spatial measurement model by malimei, liushenglong, etc. (2016)^[19] and zhuwanli, zhengzhousheng (2018)^[20]

$$\ln Cul_{it} = \rho WCul_{it} + \alpha I_n + X_{it}\beta + WX_t\theta + \delta_i + \gamma_t + u_{it}$$

Among them, Cul_{it} is the indicator of equalization of public cultural services, and X includes explanatory variables such as unemployment rate, primary education, clan system, ethnic composition, etc. In order to eliminate the

impact of possible heteroscedasticity on the empirical research results, natural logarithm is taken for each variable. ρ is the spatial variable coefficient, W is the spatial weight matrix, represents the time γ_t effect, represents the individual u_{it} effect, and is the random error term. I_n is the unit matrix. Referring to malimei, liushenglong et al. (2016)^[19] the weight matrix is set as:

$$W_{ij} = \begin{cases} 1 & \text{when region } i \text{ is adjacent to region } j \\ 0 & \text{When area } i \text{ is not adjacent to area } j \\ 0 & i = j \end{cases}$$

4. Empirical results

4.1. Descriptive statistics of data

The descriptive statistics of each variable are shown in Table 2. The average value and standard deviation of the equalization index of public cultural services are still very different. The value of the cultural diversity index is between 0 and 1. The larger the value, the more diverse the dialect is. In

Table 2, the average value of cultural diversity index is 0.235, the minimum value is 0, and the maximum value is 0.89. In prefecture level cities, the higher the cultural diversity index, the more diverse the dialects in the region. The number of Chinese dialects is also an important indicator of urban cultural diversity. The more Chinese dialects, the more diverse the dialects in the region. According to the number of Chinese dialects in each region, sanming City in

Fujian Province and Hainan city in Qinghai Province are the largest, while Tangshan City, qinhuangdao City, datong City and Changzhi City are the least diverse. In addition, **Table 2** also reports the relevant conditions of economic growth variables, and gives descriptive statistics of control variables such as unemployment rate, primary education, clan system, ethnic composition, eastern, western and ethnic regions.

Table 2. Descriptive statistics of variables

Variable	Observed value	Mean value	Standard deviation	Minimum value	Maximum
<i>Cul</i>	2 673	0.794	2.446	0.002	88.606
<i>Diversity</i>	2 673	0.235	0.281	0	0.89
<i>g</i>	2 673	10.344	4.139	-19.38	26
<i>Pri</i>	2 673	1.669	1.348	0.036	35.25
<i>Unemployment</i>	2 673	0.056	0.033	0.003	0.56
<i>Genealogy</i>	2 673	161.629	383.251	0	3671
<i>Minority</i>	2 673	0.062	0.13	0.000063	0.716
<i>West</i>	2 673	0.278	0.448	0	1
<i>East</i>	2 673	0.343	0.475	0	1

4.2. Regression results

Spatial correlation test

In the data processing stage, the samples were tested for multicollinearity. The Vif values were distributed between 102 and 152, which were within the acceptable range. Through the white test, the results showed that there was no Heteroscedasticity in the model. At the confidence level (0.05), the coefficients of all variables were less than 1, so there was no autocorrelation between all variables. The specific test results are shown in **Table 3**. The morans'i index scatter chart is drawn based on the cross-sectional data over the years. As shown in Table 3, the variables of equalization of public

cultural services have passed the Moran test at least at the significance level of 10%. Except for 2008, all Moran indexes are positive, indicating that the variables of equalization of public cultural services have positive spatial correlation and have positive spatial spillover effect. The scatter chart of morans'i index from 2008 to 2018 is drawn by Stata software. Over the years, most cities with the agglomeration effect of morans'i index are in the first place Three quadrants, that is, the equalization of public cultural services has a strong radiating and driving effect, which indicates that the equalization of public cultural services is more significant with the agglomeration of spatial and geographical location. Therefore, it should be considered to use spatial econometric model for testing.

Table 3. Morans'i index of indicators for equalization of public cultural services from 2008 to 2018

Particular year	Morans'I	E (I)	Sd (I)	Z value	P value
2008	0001	0004	0002	1547	006
2009	0088	0004	0027	3418	0000
2010	0044	0004	0027	1802	0036

Table 3. (continued)

Particular year	Morans'I	E (I)	Sd (I)	Z value	P value
2011	0056	0004	0025	2424	0008
2012	0081	0004	0026	3255	0001
2013	0073	0004	0027	2908	0002
2014	0100	0004	0028	3717	0000
2015	0061	0004	0027	2462	0007
2016	0211	0004	0024	8853	0000
2017	0114	0004	0026	4615	0000
2018	0044	0004	0018	2662	0004

Model selection of space panel

Based on the literature review of spatial metrology, floraxetal (2003) and Mur and Angula (2009) proposed that the selection of spatial metrology models can be divided into two categories, namely, from specific to general methods, or from general to specific methods. In the test of the model in this article, the Wald test shows that the Wald test value is 4919 and the p value is 0000. The original assumption that the spatial Dobbin model can be simplified into a spatial lag model and a spatial error model must be rejected, and the SDM model should be selected. Then, according to the LR test results, check whether the SDM model will degenerate into SAR and SEM models. Their p values are both 0000, which are significant at the 1% level, indicating that the SDM model will not degenerate into SAR and SEM models. The test results point to the selection of SDM models. To sum up, sdm model is selected to report relevant research results. In addition, the regression results of SAR model and SEM model are also reported in the empirical results for comparison and verification.

Empirical results

According to the regression results of the model (Table 4), the results of each variable are explained below. The results show that in the SDM model, the spatial autocorrelation coefficient ρ . The value is 0344, which is significantly positive at the 1% level, indicating that there is a high degree of autocorrelation in the space of equalization of public cultural services. In other words, the equalization

level of public cultural services in a region does not exist independently. The equalization level of surrounding regions has a spatial spillover effect on the equalization level of public cultural services in this region. Specifically, the average increase in the equalization of public cultural services in the surrounding areas is 1%, which will drive the equalization of public culture in the region to increase by 0.344%. In the spatial Doberman model, the coefficient value can not directly reflect the influence of the explanatory variable on the explained variable. Therefore, the SDM model mainly depends on the decomposition results of spatial effects. Among the three effects, the direct effect of cultural diversity on the equalization of public cultural services is 0461, and the total effect is 179. Both the direct effect and the total effect are significantly negative at the level of 5%, which is consistent with the regression results in SAR model and SEM model. This result shows that cultural diversity does have an impact on the equalization of public cultural services. From the regression results of direct effect and indirect effect, the indirect effect is not significant, and the direct effect is significantly negative, that is, cultural diversity mainly forms an obstacle to the equalization of public cultural services in the region, while the impact on the equalization of public culture in the surrounding areas is not obvious, which is in line with the practical law. It can be seen that cultural diversity does hinder the equalization of local public cultural services. From a theoretical point of view, cultural traditions, dialects, regional culture and other elements have an impact on the equalization of

public cultural services from different perspectives. First of all, under the background of different cultural traditions, ancestral hall clan culture, folk culture and national characteristic culture, residents have different standards for the supply content and service mode of public cultural services. Secondly, due to the cultural characteristics embodied in dialects, there are also obvious cultural differences between dialects in different regions and within the same dialect. Therefore, the demand for public

cultural products is also different. Finally, the regional culture formed under different values, cultural customs, attitude preferences, cultural ethics and other environments has an important impact on the formation of cultural diversity. Therefore, local governments must consider cultural differences and multiple demands for cultural products in the public cultural supply, and gradually promote the equalization of cultural resources between urban and rural areas, regions and individuals.

Table 4. Regression results

Variables	SDM model			SAR model	SEM model
	Direct effect	Indirect effect	Total effect		
<i>Diversity</i>	-0.461**	-1.328	-1.790**	-0.505**	-0.487**
<i>g</i>	0.014	0.041	0.055**	0.031***	0.033**
<i>Pri</i>	0.087**	0.273***	0.360***	0.138***	0.138***
<i>Unemployment</i>	0.036	-1.947	-1.983	-1.038	0.242
<i>Genealogy</i>	465e-05	0.00035	0.0004	884e-05	900e-05
<i>Minority</i>	0.335	-1.261	-0.925	0.162	-1.053
<i>West</i>	0.044	-0.215	-0.171	-0.158	-0.210
<i>East</i>	0.071	0.382	0.453**	0.246	0.333*
<i>Nation</i>	6.704***	-5.230***	1.474***	1.301***	1.857***
<i>P</i>		0.344***(0.03)		0.355***	0.373***
<i>Observations</i>	2 673	2 673	2 673	2 673	2 673

The total effect of economic growth on the equalization of public cultural services is 0.055, which is significantly positive at the level of 5%. However, the direct effect and indirect effect have not passed the significance test, indicating that the impact of economic growth on the equalization of public culture highlights the overall comprehensive effect, not the direct and indirect effects. The possible reason is that the scale of transfer payments, structural reform [21], intergovernmental transfer payments [22], tax reform [23] and other factors that reflect economic growth variables have limited direct and indirect impact on the equalization of public cultural services. In addition, from the perspective of the study itself, in addition to the relatively single index evaluation of economic growth variables, there are other uncontrollable

variables that may also have an important impact on the result evaluation.

The total effect of economic growth on the equalization of public cultural services is significantly positively correlated within the 5% confidence interval, indicating that there is a positive correlation between economic growth and the equalization of public cultural services in various regions. With the regional economic growth, local governments will give corresponding support to the infrastructure construction, capital investment and policies of public cultural products. Therefore, local economic growth has effectively promoted the equalization of public cultural services in the region. Financial input is the power source for the equalization of public cultural services. When a region has strong economic capacity, the

government's financial input in public services will be guaranteed, so as to ensure the construction of public cultural service venues such as infrastructure and cultural parks. For ethnic minority areas and underdeveloped areas in the west, economic growth and improving economic structure are important sources to promote the equalization of public services and enhance the construction of government service capacity. From the development in recent years, the degree of economic growth and the equalization of public cultural services has steadily increased. With economic growth, the level of equalization of public cultural services in various regions is gradually shrinking. However, there are still many gaps in the level of public cultural services in western regions, border areas and ethnic minority areas compared with developed areas. To promote public cultural services in less developed areas, the most important thing is to develop the economy and improve the infrastructure construction of public cultural places. Increasing investment in infrastructure can not only drive the economic development of backward areas, but also provide market access opportunities for less developed areas, give play to the economic spillover effect in space, and drive the independent construction and supply capacity of public goods in backward areas to a certain extent, so as to continuously narrow the regional gap and achieve the equalization of public cultural products.

In order to further verify the reliability of the research conclusion, **Table 4** also reports the regression results of SAR model and SEM model. In SAR model, spatial autocorrelation coefficient ρ . The value is 0.355, which is significant at the 1% level. The sign of cultural diversity on the equalization of public cultural services is negative, which has passed the significance test at the level of 5%, and the impact of economic growth on the equalization of public cultural services is significantly positive at the level of 1%. In SEM model, spatial autocorrelation coefficient ρ . The value is 0.373, which is significant at the 5% level. The impact of cultural diversity on the equalization of public cultural services is negative, which has also

passed the significance test at the level of 5%. The impact of economic growth on the equalization of public cultural services is significantly positive at the level of 5%. To sum up, in the regression results of SAR model and SEM model, cultural diversity, the symbolic direction and significance level of economic growth have not changed much, which further indicates that the empirical research results have a certain stability. In terms of control variables, primary education and ethnic regions are significantly positive in SDM model, sar model and SEM model, which indicates that primary education will have an important impact on the equalization of regional public culture. In areas with more developed education, the humanistic community environment is relatively good, and the government also pays more attention to the supply of public cultural products. In terms of the impact of regional variables, the control variables in ethnic areas are significantly positive, indicating that ethnic areas reflect the deficiencies in public cultural capital investment, policy support, infrastructure and other aspects, which have an important impact on the supply of public cultural products, which is also in line with the logic of fact.

4.3. Robustness test

Considering the possible reverse causal relationship between the explained variable equalization of public cultural services and the explanatory variable cultural diversity and economic growth, the model is endogenous and the regression results are biased. Although we have added many control variables to the spatial econometric model to ensure the robustness of the research results, it is still difficult to determine the causal relationship between dialect diversity and the equalization of public cultural services. In addition, cultural customs, chinese sub dialects, the number of dialects, measurement errors, missing variables, etc. Are all important sources of endogeneity. Zhan Bohui pointed out in his book investigation of Chinese dialects and dialects that the geographical barrier caused by rivers and mountains is an important factor in the formation of diverse dialects. There are

usually large dialect differences in areas with more geographical barriers, such as rivers and mountains. After being divided by rivers, it may lead to increasingly divergent living customs and language habits, thus forming dialect differences. Referring to the methods of Zhang Bo and fan Chenchen (2018)^[16], the length of rivers in various cities is used as the proxy measurement variable of dialect diversity to test whether the research results are robust. The results of robustness analysis are shown in **Table 5**. Using river length as the instrumental variable of cultural diversity, the significance between cultural diversity and equalization of public cultural services has not changed, and the direct effect is still negative. The research conclusion is verified. The direct effect

of economic growth may not be significant due to the influence of other uncontrollable variables, but the total effect of economic growth on the equalization of public cultural services is still significant. In addition, the correlation between cultural diversity, economic growth and equalization of public cultural services in SAR model and SEM model has not changed, and the research hypothesis has been verified again. The robustness test shows that the correlation between cultural diversity, economic growth and the equalization of public cultural services will not be affected by the measurement methods of cultural diversity variables. Therefore, the research conclusion has certain robustness^[24].

Table 5. Robustness test results

Variables	SDM model			SAR model	SEM model
	Direct effect	Indirect effect	Total effect		
Riverlength	-0.00025***	-0.00063	-0.00088*	-0.0003***	-0.0003***
g	0.014	0.0447*	0.0586**	0.0313**	0.0326**
Pri	0.0831*	0.237***	0.320***	0.135***	0.137***
Unemployment	-0.019	-0.72	-0.739	-0.971	-1.025
Genealogy	722e-05	0.0002	0.0003	0.00011	0.00013
Minority	0.108	-0.931	-0.823	0.375	0.465
West	-0.232	0.0178	-0.214	-0.175	-0.227
East	-0.220	0.404	0.184	0.143	0.233
Nation	6.720***	-4.489***	2.231***	1.569***	2.098***
P		0.343***		0.354***	0.371***
Observations	2 673	2 673	2 673	2 673	2 673

5. Discussion and enlightenment

5.1. Discussions

Based on the empirical study of spatial econometric model, the paper concludes that there is a significant negative correlation between cultural diversity and the equalization of public cultural services. It shows that cultural traditions, dialects, regional culture and other elements do form some

obstacles to the equalization of public cultural services in this region, and the evaluation results are still robust after regression with different models. In addition, economic growth has also effectively promoted the equalization of public cultural services. According to the results of empirical research, in the process of providing public cultural products in the future, we should give full consideration to regional culture, nationality, cultural tradition, dialect and other elements, and correctly understand the practical obstacles formed by cultural diversity to the

equalization of public cultural services in the region. Therefore, we should give further play to the new opportunities brought by economic growth for the diversified development of the supply of public cultural products, and give better play to the dynamic role of economic growth in realizing the equalization of public cultural services.

Since the implementation of public cultural service guarantee law and public library law, it has had an important impact on promoting the construction of basic public cultural service system in Western China. Since 2008, the construction of public cultural service positions has achieved important results, but with the development of urban-rural integration, it has also entered a bottleneck period. First of all, with the increasingly prominent standardization and equalization of basic public cultural services, how to solve the problem of “the last kilometer of public cultural services”, the idleness of books and e-reading rooms in cultural centers and cultural stations, and the low utilization rate of cultural facilities, the problem that rural public culture is valued but not really implemented has become increasingly prominent. With the emergence of hollow villages, the participation of young people is low, and the phenomenon that the elderly participate in activities is also common at the grass-roots level. In addition, with the increasingly diversified cultural needs of urban residents, it is imperative to solve the problem that the content of public cultural services can not keep up and how to improve the service efficiency of public culture. Finally, from the perspective of economic factors, it is urgent to solve the problems of insufficient funds, personnel salaries and lack of funds for public culture projects at the grass-roots level. The existence of these problems has seriously restricted the development of basic public culture towards equalization.

5.2. Revelation

With the implementation of the Rural Revitalization Strategy, how can the rural style be civilized? It is necessary to strengthen and promote

the equalization of public cultural services in western rural areas and border ethnic areas. Specifically, since cultural diversity is an important obstacle to the equalization of public cultural services in the region, first of all, in different regions, based on different regional ethnic habits, cultural traditions, dialect differences, regional culture, ethnic minority language diversity and other factors, cultural service institutions at all levels and types must be more differentiated, targeted, purposeful and scientific in the process of providing public cultural services. For example, libraries, cultural centers, cultural stations and museums provide more diversified public cultural services. Each station and Museum strengthens the collection construction of ethnic minority languages, takes into account the diverse needs of different regions for public cultural products, increases efforts to support independent public cultural service supply modes under the environment of different ethnic groups, languages and cultural customs, and constantly enriches and improves the diversified development of public cultural products. Secondly, in terms of improving the efficiency of public cultural services, the functions of township comprehensive cultural stations and rural public cultural infrastructure need to be upgraded. The supply of public cultural products in different regions should be classified according to different cultural needs, and different cultural services should be provided for different regions. Finally, we should introduce new standards for the equalization of public cultural services and improve the construction of hardware and infrastructure positions. For villages in ethnic areas and remote areas, we should give full play to the role of policy based supply to steadily realize the equalization of public cultural services.

In combination with the law of economic growth, local governments should constantly improve the structure of fiscal expenditure and strengthen the diversified supply of public cultural products, service content and service methods. The financial capacity of local governments is the material basis for realizing the equalization of basic public cultural services. Therefore, local

governments should ensure the financial investment in public cultural services, balance the financial expenditure of public services in various regions through transfer payment and other means, and improve the infrastructure construction in ethnic areas and western underdeveloped areas. Based on the contents and standards of public cultural services, in the process of the allocation of public cultural service venues and facilities, it is necessary to highlight regional and ethnic characteristics, set up ethnic cultural relics exhibition rooms and showrooms according to local conditions, and constantly improve the management, research and display service level. Professionals are an important foundation for the equalization of basic public cultural services. In terms of talent policy and selection of professional titles, indicators should be adjusted to form an echelon arrangement according to the eastern, western and ethnic regions, and increase the proportion of grass-roots professionals. Give full play to the role of literary and art backbones and volunteers, and give support in welfare and policy guarantee, so that they can truly play their leading role. For the cultivation of talents in Xinxiang, we can give full play to its real function by issuing certificates and assessing professional titles. For Intangible Cultural Heritage Inheritance, we hope to give appropriate subsidies to intangible cultural heritage inheritors, pay attention to local cultural construction, spread local intangible cultural heritage and carry forward traditional culture. Let the people engaged in public cultural services make full use of their talents, give full play to their real functions, and promote the construction of the public cultural service system.

In the supply of public cultural service products, cultural institutions should continue to expand the supply of public cultural services in the form and content of innovation. The library has made innovations in the supply mode of reading promotion, rural bookstores, cultural compounds, cooperation with Bookstore enterprises, etc., guiding private libraries, bookstores and other third parties to participate in public cultural supply, leading the

whole people to read and popularize art, and finally realizing the whole people's reading, so as to make the grass-roots villages move towards modern civilization. The cultural station promotes the equality of cultural services through the construction of characteristic cultural stations, carrying forward the inheritance of intangible cultural heritage in the region, etc. The cultural center can introduce private museums. Because the cultural center and cultural site are too far away from residents, it is necessary to adjust measures to local conditions, multi-point layout, and adopt differentiated public cultural product supply for different regions. In terms of finance, we should constantly improve the system construction, increase the investment in policy funds, strengthen the supply of public cultural services through the government's purchase of public cultural services, and provide high-end configuration for the lectures and performances purchased by the grass-roots level, so that the grass-roots people can also feel the real cultural feast. To sum up, local governments can effectively integrate the non-material culture, cultural and tourism integration with the local public cultural construction by effectively integrating the funds, talents, facilities and other resources of the "three pavilions and one station", and steadily promote the equalization and development of public cultural services.

Conflict of interest

The authors declare no conflict of interest.

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