

# An Empirical Study on the Impact of Individual Local Political Elites and Decision-Making Collective on Educational Fiscal Expenditure in China

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**Abstract.** *Under the current decentralization system in China, individual characteristics of the local political elites and collective characteristics of the standing committees of the local party have an impact on local education fiscal policy. Yet published research on the similarities and differences between the collective influence of the Standing committee and the individual influence of the political elite are lacking. To address this gap in the literature, our study discussed the impact of local political elites represented by the mayor and the secretary and the collective of standing committees of the local party on education fiscal expenditure. We construct multiple regression models and analyze the  $R^2$  Change of variables is based on the cross-sectional data from 2015 of 283 prefecture-level administrative units in China. We find that both political elites and the standing committees have significant impacts on fiscal expenditure in education, and that the influence of the latter is greater than that of the former. The effect of individual characteristics and collective characteristics on education fiscal expenditure is not completely consistent across prefectures. China's prefectural governments implement China's unique principle of democratic centralism when they make decisions on local spending for education and the collective decision-making under the leadership of the committee plays an important role in education fiscal expenditure. Based on this, we put forward policy suggestions to further develop the principle of democratic centralism and to optimize optimizing the local government education supply and evaluation mechanism.*

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## **Introduction**

**W**ITH decentralization reform in China, Chinese local governments face unique incentives and constraints given their institutional design. As a result, mainstream Western fiscal decentralization theory provides little insight into China's problems, leading Yingyi Qian (1996) and others to argue that Chinese decentralization system design differs from that of the Western. "Chinese-style fiscal federalism" is the result of the unity of economic decentralization and political centralization (Blanchard & Shleifer, 2001). While implementing economic decentralization, the party and higher-level government organizations maintain control of the incentives and constraints on the party and government organizations at lower levels through organizational personnel arrangements based on local development performance (often expressed as local economic growth performance) (Li & Zhou, 2005). Such institutional design has allowed localities to allocate more energy and resources to areas conducive to economic growth in the process of "competing for growth" which has mobilized local governments to develop the economy through initiatives that promote high-speed growth of the local economy, but has also brought problems for local education, health care, environmental protection, and investment resources, etc. (Fu & Zhang, 2017; Wang & Zhou, 2013; Xu, 2011; Yu, 2017; Zhou, 2006; Qiao, et al., 2005). On the other hand, compared with the Western countries, China's local government officials have greater discretionary power in the process of intergovernmental competition and local governance, especially in the use of funds and budgetary arrangements. With this greater flexibility, China's local governments exhibit a clear "soft budget" in terms of local fiscal expenditures. This means that local officials can take more flexible measures to deal with local affairs based on their own experience and preferences (Yang & Zheng, 2013; Zhang, 2008).

Given this local flexibility, many scholars have paid attention to the relationship between the personality traits of officials and local governance. Xianbin Wang (2009), Li'an Zhou (2005), Tingjin Lin (2009), Xianxiang Xu (2008), Ran Song (2016), Yini Jiang (2017) and others use the analysis of government behavior from provincial, city and county levels as a starting point to discuss demographic characteristics of local officials, such as gender, age, education, and the relationship between work experience and the supply of public goods such as education, which provides new perspectives and ideas for interpreting China's local governance model. However, such empirical researches, while paying attention to the influence of individual traits of officials, fail to connect this with collective decision-making of local governance in China. As democratic centralism is the fundamental organizational and leadership system of the local government, current researches are clearly insufficient to fully describe China's local governance characteristics. Given the organization of democratic centralism and decision-making principles, decisions on education finance must be made through a few democratic processes that are subject to the majority (Zhu & Hu, 2014). Therefore, accurately describing the decision-making behavior and characteristics of Chinese local government officials requires a focus on the relationship between the collective charac-

teristics of decision-making body and their relationship with the individual characteristics of political elites.

A proper description of the collective characteristics of local leadership is fundamental to such kind of researches. Some early researches have been explored this theoretical logic regarding the collective as a rational decision maker, such as the Logic of Collective Action (Olson, 2014). From this perspective, the government can be regarded as a “personified” individual. In recent years, some foreign studies have begun trying to describe the characteristics of decision-making collectives quantitatively. The basic idea is similar to the above theoretical logic; that is, by considering the collective as an “individual” with certain characteristics, and then using the corresponding indicators (i.e., the composition of the collective average individual characteristics) the collective can be described (Alesina et al., 2015). Most such researches in China are still at the stage of theoretical discussion. Some scholars analyzing public finance behavior have reported on officials stating that personal motives partially affected government group motivation (Cao et al., 2014). Others start from the concept of “collective leadership” and describe the dimensions and characteristics of collective decision-making (Yang et al., 2014). To date, however, there have been few studies on the influence of collective leadership in China, and high-quality empirical research is especially lacking (Cai & Yao, 2018; Zhang, 2014).

This paper considers the local government decision-making body in terms of individuals of political elite and collective of the party committee. Government officials discuss the impact of individual and collective decision-making on education spending and its financial interactions. Finally, an analysis of the local government’s supply behavior of public goods, such as education, is considered. In the public fiscal expenditures, only the education fiscal expenditure item has the target stipulated explicitly by the government, moreover, the education publicity and the education finance expenditure with lag behind effect can reflect the local official’s fiscal expenditure preference more. For these reasons, this article focuses on the following questions: What are the similarities and differences between the political elite and the party committee’s standing committee, and how do they interact? What is the impact of the demographic characteristics and job experience characteristics of officials on the education fiscal expenditure? What specific characteristics have a critical impact on the education fiscal expenditure? Answering these questions can provide a deeper understanding of the influence of local officials on education finance, and will allow a better interpretation of the behavioral motives of local officials under the “Chinese-style decentralization” system. Ultimately, this can help local political elites and party committee to make scientifically-based decisions.

## **Methods**

### **Research design**

The 2015 prefecture-level administrative units are used as the research subject, and data are collected on the personal characteristics of the mayor, the municipal party commit-

tee secretary and the members of the standing committee of the party committee for use in a regression models for analysis. We chose prefecture-level administrative units as our research objects because of the availability of data and the need for research methods. First, provincial data cannot meet sample size requirements and county-level data is difficult to obtain; thus, only prefecture-city level data met research needs. Second, although China has a “Provincial County” financial management system, with only three provincial cities and counties in the administrative relationship, the local government level bears an important responsibility for the development of local education. Third, the logic of local government behavior between leading individuals and collectives in the supply of education are present at provincial prefecture and county levels, the prefecture level can also explain this logic. Therefore, the administrative units at the prefecture level are reasonable as the research subjects of this study.

This paper therefore uses the data of prefecture-level administrative units in China to compare and analyze the behaviors of prefecture-level political leaders in financial expenditures on education, including the party committee secretary, the mayor (including the heads of autonomous league, governors of the autonomous prefectures)<sup>1</sup> and the decision-making collectives of the party committee. The basic characteristics of the collective committee of the party committee at the prefecture level are described using the “personification” method and averaging of individual committee member traits, and combined with the demographic and experience characteristics of the party committee secretary and the mayor as independent variables to establish six regression models. These models explore the relationship between individual and collective characteristics of political leaders at the prefecture level and fiscal expenditures for education. The variables of this study are designed as follows.

### *Dependent variables*

China’s assessment of the financial responsibility of local government education is mainly based on two indicators: the proportion of education fiscal expenditure relative to GDP should be greater than 4% and the proportion relative to the fiscal expenditure should be greater than 15% (Government Central Committee, 1993; National Education Commission, 1993). These two indicators can not only describe the total level and effort of local government on education and financial expenditure, but also express the spending preference of local governments. Thus, we use “educational fiscal expenditure as a share of GDP” and “educational fiscal expenditure accounts for the proportion of fiscal expenditure” as two dependent variables in each group model.

### *Independent variables*

The collective level Party committee as a decision-making body is based on personal characteristics of the political elite personnel to generate a quantitative description of the collective identity of officials (Alesina et al., 2015). It includes not only demographic variables such as gender, nationality, age, years of education, and professional back-

ground, but also the characteristics of the tenure of office, promotion rate, and working in the household registration area or not.

## *Control variables*

This study sets the level of local economic development, regional categories, population size, education needs, fiscal expenditure decentralization, and fiscal control variables, such as autonomy. The level of economic development is expressed in terms of local per capita GDP. China is divided into three major regions of East, Central and West, which are modeled by virtual variables (using the western region as the reference group). Population size is represented by the permanent population at the end of the year. The number of students enrolled in the city is used to indicate education needs. The financial expenditure decentralization index and the financial autonomy index are used as proxies for the local government's financial operation characteristics.

## Data Processing

Resumé and socio-economic data in 2015, obtained from the national-level administrative units for the party committee officials, were used for analysis. An information table was generated for officials using the party committee leadership directory in the yearbook, from searching resúmes for standing committee members from People's Daily, Xinhua, and the government portals directory list, and using the socio-economic data and education finance data from the China City Statistical Yearbook (2016) and local statistical yearbooks.

In 2015, 334-prefecture-level administrative units were present in China; analysis excluded areas where the data were scarce<sup>2</sup>. The term of office of the standing committee of each party committee is typically five years. A small number of members of the standing committee may change during a non-change year, and the leadership role of the new standing committee then takes some time to take effect; thus, members of the standing committee of the prefecture-level local party who were changed in 2015 and have served for less than half a year were excluded. After personal information was extracted for members, standing party committee-level characteristics for the group were calculated as the average individual characteristic or as a proportion. In this way, the personal data from 3,482 prefecture-level party committee members were combined into 314 values of the collective characteristics of the standing committee members of the prefecture-level party committee. The specific calculation method for each variable is shown in **Table 1**. To match the political elite and the standing committee, samples with missing values are deleted<sup>3</sup>. Finally, the Pauta criterion for excluding outliers was applied<sup>4</sup>. Using the obtained 283 sets of complete matching samples, we ran the following descriptive statistical analysis.

## Results

### Basic Descriptive Statistical Analysis

**Table 1. Variable Setting and Descriptive Statistical Analysis.**

	Variable	Abbr.	Metric Method		Mean	SD	Minimum	Maximum
Dependent Variable	Education expenditure as a percentage of GDP (%)	EX_GDP	Education expenditure as a percentage of GDP = education expenditure / GDP * 100		3.812	1.892	0.857	10.718
	Education expenditure as a share of fiscal expenditure (%)	EX_FE	Education expenditure as a percentage of local fiscal expenditure = education expenditure / fiscal expenditure * 100		17.722	3.774	4.836	27.501
Independent Variable – Political Elite Individual Characteristic	Gender	G	1=female; 0=male	Secretary	0.060	0.238	0.000	1.000
				Mayor	0.081	0.274	0.000	1.000
	Nationality	N	1=minority; 0=han	Secretary	0.081	0.274	0.000	1.000
				Mayor	0.127	0.334	0.000	1.000
	Age	A	Age = December 2015 - date of birth	Secretary	53.812	3.233	43.090	61.020
				Mayor	51.567	3.449	40.040	60.000
	Education (years)	EY	Education Year = full-time education year + in-service education year (excluding short-term training)	Secretary	19.583	3.037	12.000	31.000
				Mayor	19.996	3.058	13.000	31.000
	Education Major	EM	1=social science; 0=natural science	Secretary	0.604	0.490	0.000	1.000
				Mayor	0.580	0.495	0.000	1.000
Serve in the household registration area	SHRA	1=yes; 0=no	Secretary	0.544	0.499	0.000	1.000	
			Mayor	0.661	0.474	0.000	1.000	
Current position tenure	CPT	Current tenure of office = December 2015 - date of the current position	Secretary	2.254	1.547	0.060	8.090	
			Mayor	2.081	1.508	0.050	9.100	
Promotion rate	PR	Promotion rate = 1 / pre-service years of service	Secretary	0.034	0.007	0.024	0.067	
			Mayor	0.037	0.008	0.024	0.084	
Independent Variables – Collective Characteristic of the Standing Committee the Party	Female share (%)	FS	Female share = number of women / total number * 100		9.194	6.959	0.000	30.000
	Minority share (%)	MS	Minority share = number of ethnic minorities / total number of people * 100		7.844	13.662	0.000	57.143
	Average age (years)	A_A	Average age = sum of age / total number of people		51.996	1.714	48.275	57.146
	Average Education (years)	A_EY	Average education year = sum of years of education / total number of people		18.508	1.143	15.000	22.667
	The proportion of social science (%)	PSS	The proportion of social science majors = number of social science profes-		54.602	18.876	0.000	92.857

			sionals / total number * 100				
	The average proportion of officials serving in household registration area (%)	AP_SHRA	The average proportion of officials serving in household registration area = number of domiciled tenure / total number of people	25.851	16.525	0.000	83.333
	Average current position tenure	A_CPT	Average current tenure of office = total number of current tenure / total number of people	2.612	0.764	0.489	4.777
	Average promotion rate	A_PR	Average promotion rate = sum of promotion rates / total number of people; among them, promotion rate = 1 / pre- working years	0.040	0.004	0.028	0.067
Control Variable	Per capita GDP of each city (10,000 CNY/person)	Per_GDP	Per capita GDP of each city = GDP per year / permanent population at the end of the year	4.965	2.931	1.217	20.716
	East area	E	1=eastern; 0=others	0.364	0.482	0.000	1.000
	Central area	C	1=Central; 0=Others	0.382	0.487	0.000	1.000
	Permanent population at the end of the year (10,000 people)	PP	The city's permanent population at the end of the year	414.829	256.210	24.390	1465.750
	Urbanization rate (%)	UR	Urbanization rate = urban household registration population at the end of the year / total household registration at the end of the year *100	53.451	14.333	11.212	100.000
	The proportion of students enrolled in the city (%)	PSE	The proportion of students enrolled in the city = the number of students at all levels of the city at the end of the year / the number of registered households at the end of the year * 100	14.726	4.683	1.472	39.125
	The city's fiscal expenditure decentralization index (%)	FED	The city's fiscal expenditure decentralization index = the city's fiscal expenditure / the province's fiscal expenditure * 100	6.841	4.886	0.889	30.560
	Financial autonomy (%)	FA	Financial autonomy = the city's fiscal revenue / the city's fiscal expenditure * 100	45.651	22.025	9.242	103.843
<p><i>Due to the fact that some data of the Standing Committee of some party committees cannot be collected, the missing official information is not included in the calculation.</i></p>							

Among the leaders at the prefecture-level in China, there are fewer female and minority members, and male still are the majority of local leaders. The average age of the secretary is 53.81 year-old, which is greater than the average age of the mayor and the standing committee. The political elites have a higher education level than the standing



committee, but the vast majority party members have higher education experience. The background of political elite is more balanced; members of the standing committee have mostly social science backgrounds. Approximately half of the secretaries and mayors are working in the household registration areas, but only 25.85% of the party committee members are native. The serving term of secretaries and mayors is 2.254 and 2.081 years respectively, which are shorter than that of the political elite of the party committee. All members of three decision-making bodies basically started to take up their current positions in the last year of change of leadership, namely around 2012, which shows which shows the consistency of the collective party committee. The rate of promotion of the political elite was 0.034 and 0.037 for secretaries and mayors, respectively, indicating that the collective promotion of the party committee is in a slower rate.

## Regression Analysis

Multiple sets of regression models are analyzed for similarities, differences and interactions between the local political elites and the party committee standing committees on the impact of education financial expenditures. Using Stata14.0 software to analyze the characteristics of the three leading subjects and the cross-sectional data of education fiscal expenditures of 283 prefecture-level administrative units in China in 2015, the regression results are shown in **Table 2**. All models passed the collinearity test, and the heteroscedasticity was processed by Weighted Least Squares (WLS) for models 1, 2, and 4 according to the White test results, and robust regression results were obtained.

The six models in **Table 2** reveal that prefecture-level officials and the local party committee members have a certain degree of influence on educational expenditures, but after controlling for common variables; regression coefficient analysis indicates that the mechanism of influence is not completely consistent. For example, in the regression model of the prefecture-level secretary, individual characteristics of the secretary has no significant effect on the proportion of the education fiscal expenditure in GDP, but has a significant effect on the proportion of education fiscal expenditure in the general public budget expenditures. Specifically, the secretary from the minority nationality has a significant negative impact on the education fiscal expenditure. Model 2 showed that when the secretary is of minority nationality, then the expenditures in education decrease by 1.3296%. In addition, the secretary who works in the household registration area is more likely to increase financial expenditures on education; that is, the secretary of the post has a geographical bias in the education and financial expenditure. It is worth noting that the faster the political promotion, the lower the support for education finance; the reverse effect is particularly obvious.

Judging from the regression model of prefecture-level mayors, the personal characteristics of the mayor have a significant impact on the proportion of education finance relative to GDP and fiscal expenditure. Models 3 and 4 show these results: controlling for other conditions, women mayors increase education fiscal expenditures as a proportion of GDP by more than 0.5788% compared to male mayors. Fiscal expenditures on education for minority nationality mayors show a complex relationship; the mayor of a minority nationality increases fiscal expenditures on education by 0.9591%

**Table 2. Regression Model of the effect of the Collective Characteristics of Political Elites and Party Committees on Education Financial Expenditure.**

	Secretary		Mayor			Standing Committee Collective	
	Model 1	Model 2	Model 3	Model 4		Model 5	Model 6
	EX_GDP	EX_FE	EX_GDP	EX_FE		EX_GDP	EX_FE
G	0.0651	-0.3164	0.5788**	1.0087	FS	0.0068	-0.0215
	-0.22	(-0.44)	-2.15	-1.32		-0.65	(-0.83)
N	0.5044	-1.3296***	0.9591***	-0.9783*	MS	0.0214***	-0.0237
	-1.15	(-2.77)	-4.01	(-1.73)		-3.45	(-1.55)
A	-0.0055	-0.0767	-0.016	-0.0319	A_A	-0.0617	-0.0438
	(-0.25)	(-1.04)	(-0.54)	(-0.44)		(-1.13)	(-0.32)
EY	-0.0095	-0.0125	-0.0652***	-0.0646	A_EY	-0.1259*	-0.1433
	(-0.49)	(-0.22)	(-2.68)	(-1.13)		(-1.81)	(-0.83)
EM	0.062	-0.2158	0.2418	0.054	PSS	0.0093**	0.0139
	-0.45	(-0.61)	-1.62	-0.15		-2.23	-1.36
SHRA	-0.2068	0.7371**	-0.1605	-0.7019*	AP_SHRA	0.0057	0.0097
	(-1.59)	-2.21	(-1.02)	(-1.80)		-1.23	-0.84
CPT	0.0342	0.0828	0.0314	-0.0075	A_CPT	0.0978	0.2381
	-0.82	-0.73	-0.61	(-0.06)		-0.9	-0.89
PR	-1.0749	-92.8285***	-4.065	-25.8372	A_PR	-32.1286*	-98.0084**
	(-0.13)	(-2.95)	(-0.34)	(-0.88)		(-1.67)	(-2.06)
Per_GDP	-0.2121***	-0.2582**	-0.1960***	-0.3256***	Per_GDP	-0.2219***	-0.2384**
	(-4.91)	(-2.30)	(-4.19)	(-2.66)		(-4.70)	(-2.05)
E	-0.6477***	0.2755	-0.4899**	0.476	E	-0.4209*	0.4245
	(-2.89)	-0.49	(-2.25)	-0.8		(-1.90)	-0.78
C	-0.9813***	-2.5500***	-1.0390***	-2.1664***	C	-0.9761***	-2.1753***
	(-4.53)	(-5.14)	(-5.36)	(-4.23)		(-4.95)	(-4.47)
PP	-0.0005	0.0048***	-0.0002	0.0051***	PP	-0.0007*	0.0048***
	(-1.36)	-5.23	(-0.53)	-5.31		(-1.74)	-4.82
UR	-0.0154**	-0.0254	-0.0182**	-0.0358*	UR	-0.0219***	-0.0462**
	(-2.23)	(-1.37)	(-2.30)	(-1.80)		(-2.68)	(-2.29)
PSE	0.0149	0.2487***	0.0319*	0.2122***	PSE	0.0208	0.2334***
	-1.06	-6.35	-1.81	-5.35		-1.18	-5.34
FED	0.0317	-0.1722***	0.0374*	-0.1776***	FED	0.0550**	-0.2757***
	-1.55	(-3.06)	-1.78	(-3.14)		-2.31	(-4.69)
FA	-0.0200***	0.0037	-0.0264***	0.0121	FA	-0.0183***	0.0155
	(-4.88)	-0.25	(-4.24)	-0.81		(-2.81)	-0.97
Constant	7.4100***	23.8894***	8.9141***	21.6963***	Constant	12.7566***	25.3126***
	-4.89	-4.95	-4.51	-4.48		-3.73	-3
Observations	283	283	283	283	Observations	283	283
R-square	0.6	0.485	0.621	0.413	R-square	0.619	0.418
Ad R <sup>2</sup>	0.576	0.454	0.598	0.378	Ad R <sup>2</sup>	0.596	0.383
F	24.9212	15.6637	27.1867	11.7111	F	27.0424	11.9181

*t* is the value in parentheses; \* indicates  $p < 0.10$ , \*\* indicates  $p < 0.05$ , and \*\*\* indicates  $p < 0.01$ .

of GDP, but reduces education finance relative to the proportion of fiscal expenditure by 0.9783%. Education expenditure is affected by the number of years of education the mayor has – where mayors have more education, less is spent on education. A significant negative effect of a domicile serving mayor occurs, that is, the local mayor doesn't have regional favoritism in the education financial expenditure, inversely, it restricts the education financial expenditure level.

Judging from the regression model of the leaders of the prefecture-level standing committee, the collective characteristics of the standing committee of the party committee have a significant impact on the proportion of education finance relative to GDP and fiscal expenditure. In Models 5 and 6, it can be seen that gender structure, average age, average tenure, and average household registration ratio of the standing committee of the prefecture-level party committee do not significantly affect local education fiscal expenditures. The proportion of minority nationalities, the average years of education, the professional background and the average rate of promotion all significantly affect fiscal expenditure for education. Specifically, the party committee and the collective members of minority groups is positively correlated with proportion of education expenditure relative to GDP, indicating that members of the standing committee of minority background are more likely to approve education expenditures. Prefecture-level party committee members with more years of education on average are less likely to increase education spending. In the prefecture-level party committee collective, the more members that had a background in social sciences, the more the collective spent on education. In party committees that had a faster average promotion rate, the standing committee of the collective spent more on education.

The collective characteristics of political elites and party committees have a consistent influence on expenditures in education. First, the national characteristics of the secretary, the mayor and the standing committee collectively have a significant and complex relationship to education expenditure. Models 2 and 4 showed that party secretaries and mayors from minority nationalities tend to reduce the proportion of education finances relative to local officials from the Han nationality. However, models 3 and 5 indicate that officials from minority nationalities will reduce the proportion of fiscal expenditures relative to GDP. This shows that the identity of minority officials of local officials can increase the overall level of education and financial expenditures, whether for individual officials or standing committees. However, their efforts they exert are insufficient under the limited financial conditions, and they would like to use other basic public fiscal expenditures to take over the education finance. Second, both Models 3 and 5 showed that the higher the education level of the officials, the less enthusiastic they are about financial expenditures on education. This shows that highly educated officials have high expectation of achievement and relatively strong promotion motivation. Third, models 2, 5, and 6 showed that the promotion rate of the secretary and the party committee is significantly negatively correlated with financial expenditures on education. This shows that with a better development situation, officials do not increase education expenditure; the secretary and the standing committee have similar views on promotion. Officials promotion assessment and non-financial situation of education

occupies an important portion, education has not been given sufficient attention in local development. Fourth, regardless of whether the local political elite is an individual or a collective, financial expenditures on education are not affected by the age of the official or the length of the current term of office.

The individual characteristics of the political elite and the party committee's standing committee also have inconsistent effects on education expenditures. For example, genders have inconsistent impact. Model 3 shows that female mayors can significantly affect education expenditures, but models 5 and 6 show no significant gender effects in the standing committee. Secondly, the influence of professional background characteristics is inconsistent. Models 1, 2, 3, and 4 showed that the professional background of the secretary and the mayor does not have a significant effect on fiscal expenditures in education, but model 5 shows that the collective professional structure of the standing committee does have a significant effect on the fiscal expenditure of education. In particular, members of the standing committee with social science professional backgrounds have a strong preference for educational expenditures. Furthermore, the characteristics of serving in the household registration area or not does not affect this relationship. Model 2 and 3 show that a geographical favoritism exists for the secretary but the mayor that act in opposition. Models 5 and 6 show the standing committee of the collective centralized decision-making process, because the individual is subject to the influence of other officials of the standing committee, and such geographical favoritism disappears. This shows that the characteristics of the officials working in the household registration area have a significant impact on the education fiscal expenditure. However, due to inconsistent motivation and demand for the individual's promotion, there is an inconsistent attitude toward the public fiscal expenditures on education.

In general, influence of the political elite individual and the party committee standing committee on the educational fiscal expenditure is affected by nationality, years of education and the rate of promotion. Gender and working in the household registration area at the individual level also affect spending on education, but this effect disappears after the collective "personification" is taken into consideration. Professional background characteristics are not significant at the individual level of the political elite but are significant at the collective level. Age and term characteristics have no significant effect.

## The Degree of Influence of Each Variable: $\Delta R^2$ -based Calculation

After comparing and analyzing the relationship between the personal characteristics of political elites and the influence of the collective characteristics of the standing committee on the fiscal expenditure of education, moreover for clarifying what the impact is of demographic characteristics and job experience characteristics on the education fiscal expenditure, and what specific characteristics have a critical impact on the fiscal expenditure of education, we use  $\Delta R^2$  (R Square Change) to analyze the amount of change index; which is majorly used to measure the impact of explanatory variables on the de-

**Table 3. R<sup>2</sup> Change of the Effect of the Secretary's Individual Characteristics on the Financial Expenditure of Education.**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Change Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Model 1	Demographic Characteristics	0.23	0.053	0.036	1.857	0.053	3.108	5	277	0.01
	Job Experience Characteristics	0.279	0.078	0.051	1.843	0.025	2.475	3	274	0.062
	Control Variables	0.760	0.577	0.552	1.267	0.499	39.212	8	266	0
Model 2	Demographic Characteristics	0.111	0.012	0.006	3.784	0.012	0.685	5	277	0.635
	Job Experience Characteristics	0.263	0.069	0.042	3.693	0.057	5.598	3	274	0.001
	Control Variables	0.628	0.395	0.358	3.023	0.325	17.874	8	266	0

DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SEE: Standard Error.

**Table 4. R-Variation of the Effect of the Mayor's Individual Characteristics on Education Financial Expenditure.**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Change Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Model 3	Demographic Characteristics	0.371	0.137	0.122	1.773	0.137	8.823	5	277	0.000
	Job Experience Characteristics	0.384	0.147	0.122	1.772	0.01	1.069	3	274	0.363
	Control Variables	0.788	0.621	0.598	1.2	0.473	41.461	8	266	0.000
Model 4	Demographic Characteristics	0.16	0.025	0.008	3.759	0.025	1.447	5	277	0.208
	Job Experience Characteristics	0.182	0.033	0.005	3.764	0.008	0.735	3	274	0.532
	Control Variables	0.613	0.376	0.338	3.07	0.342	18.224	8	266	0.000

DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SEE: Standard Error.

**Table 5. R-Variation of the Effect of the Collective Characteristics of the Standing Committee on the Education Financial Expenditure.**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Change Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Model 5	Demographic Characteristics	0.42	0.176	0.161	1.733	0.176	11.849	5	277	0.000
	Job Experience Characteristics	0.444	0.197	0.174	1.72	0.021	2.383	3	274	0.070
	Control Variables	0.787	0.619	0.596	1.202	0.422	36.867	8	266	0.000
Model 6	Demographic Characteristics	0.260	0.067	0.051	3.677	0.067	4.004	5	277	0.002
	Job Experience Characteristics	0.285	0.081	0.054	3.67	0.014	1.36	3	274	0.255
	Control Variables	0.646	0.418	0.383	2.965	0.336	19.207	8	266	0.000

DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SEE: Standard Error.

pendent variable contrast level (Chen & Huan, 2010; Hanaysha et al., 2011). It is a measure of the contribution of each dependent variable to the independent variables (Johnson et al., 2004). The calculation formula is:

$$\Delta R^2 = R^2_{\text{current}} - R^2_{\text{previous}}$$

Where current is a model with an additional explanatory variable but is otherwise identical to the model previous.  $\Delta R^2$  thus represents the contribution or additional explanatory power of the latest predictor variable on the dependent variable in the model interpretation.

Based on the nature and connotation of official characteristic variables, this study divides the independent variables into three dimensions and brings them into the regression model. Gender, nationality, age, years of education and professional background variables represent basic information for the officer, referred to as demographic characteristics, while serving in the household area, current tenure and promotion rate, serving as official's work experience characteristics. Socioeconomic background is used as the control variable. The  $\Delta R^2$  in each dimension was calculated using SPSS 24.0 and the results were presented below:

Among the models, model 1 (**Table 3**) reveals that demographic characteristics of the secretary can explain 5.3% of education expenditure relative GDP ( $\Delta R^2 = 0.0053$ ,  $n = 277$ ,  $p < 0.05$ ) and the explanatory power of the job characteristics is 7.8% ( $\Delta R^2 = 0.025$ ,  $n = 274$ ,  $p < 0.1$ ). Thus, secretary individual demographic characteristics and work experience characteristics have significant explanatory power on education expenditure, with demographic characteristics explaining a greater proportion of education spending than work experience characteristics. The secretary has a relatively strong effect on education financial expenditure, explaining 6.9% of the entire model ( $\Delta R^2 = 0.057$ ,  $n = 274$ ,  $p < 0.01$ ), while population statistical characteristics had no significant influence. This suggests that demographic and work experience characteristics of secretaries need to be paid peculiar attention because it will significantly explain the financial supply of local education.

From **Table 4**, in individual statistical characteristics of the population, only the mayor had any influence on financial education ( $\Delta R^2 = 0.137$ ,  $n = 277$ ,  $p < 0.01$ ). This shows that the influence of the individual characteristics of the mayor on the financial expenditure in education mainly comes from its demographic characteristics, but the impact of work experience characteristics is relatively limited.

In model 5 of the collective characteristics of the party standing committee on the proportion of education fiscal expenditure in GDP, demographic characteristics ( $\Delta R^2 = 0.176$ ,  $n = 277$ ,  $p < 0.01$ ) and work experience characteristics ( $\Delta R^2 = 0.021$ ,  $n = 274$ ,  $p < 0.1$ ) are significant factors (**Table 5**). For the proportion of education fiscal expenditure in public fiscal expenditures, only demographic characteristics have significant influence ( $\Delta R^2 = 0.067$ ,  $n = 277$ ,  $p < 0.05$ ). This shows that the characteristics of the two dimensions of the standing committee are important factors influencing the state of education fiscal expenditure, but comparing models 5 and 6 shows that demo-

**Table 6. The R<sup>2</sup> Changes of the Secretary's Individual Characteristics on the Fiscal Expenditure (% of GDP) of Education.**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Adjusted Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Demographic Characteristics	N	0.202	0.041	0.037	1.856	0.041	11.93	1	281	0.001
	EY	0.222	0.049	0.042	1.851	0.008	2.458	1	280	0.118
	A	0.226	0.051	0.041	1.853	0.002	0.540	1	279	0.463
	EM	0.228	0.052	0.038	1.855	0.001	0.356	1	278	0.551
	G	0.23	0.053	0.036	1.857	0.001	0.292	1	277	0.590
Job experience Characteristics	SHRA	0.257	0.066	0.046	1.848	0.013	3.843	1	276	0.051
	CPT	0.266	0.071	0.047	1.847	0.005	1.342	1	275	0.248
	PR	0.279	0.078	0.051	1.843	0.007	2.213	1	274	0.138
Control Variable		0.760	0.577	0.552	1.267	0.499	39.212	8	266	0.000

*DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SEE: Standard Error.*

**Table 7. the R<sup>2</sup> Changes of the Secretary's Individual Characteristics on the Fiscal Expenditure of Education (The Proportion of Fiscal Expenditure).**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Adjusted Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Demographic Characteristics	N	0.202	0.041	0.037	1.856	0.041	11.93	1	281	0.001
	EM	0.222	0.049	0.042	1.851	0.008	2.458	1	280	0.118
	EY	0.226	0.051	0.041	1.853	0.002	0.54	1	279	0.463
	G	0.228	0.052	0.038	1.855	0.001	0.356	1	278	0.551
	A	0.23	0.053	0.036	1.857	0.001	0.292	1	277	0.590
Job Experience Characteristics	PR	0.257	0.066	0.046	1.848	0.013	3.843	1	276	0.051
	SHRA	0.266	0.071	0.047	1.847	0.005	1.342	1	275	0.248
	CPT	0.279	0.078	0.051	1.843	0.007	2.213	1	274	0.138
Control Variable		0.760	0.577	0.552	1.267	0.499	39.212	8	266	0.000

*DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SE: Standard Error.*

graphic characteristics ( $\Delta R^2 = 0.176$ ,  $\Delta R^2 = 0.067$ ) contribute more than do work experience characteristics ( $\Delta R^2 = 0.021$ ,  $\Delta R^2 = 0.014$ ). This indicates that for the collective identity, demographic characteristics have stronger explanatory power, but it is not sufficient to fully explain fiscal education supply factors if without consideration of the collective identity.

Although it is known that it is necessary to focus on the demographic and tenure characteristics of the secretary by calculating R<sup>2</sup> change in each dimension, the demographic characteristics of the mayor, and the demographic and work experiences

**Table 8. The R<sup>2</sup> Changes in the Effect of the Mayor's Individual Characteristics on Educational Fiscal Expenditure (% of GDP).**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Adjusted Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Demographic Characteristics	N	0.322	0.103	0.1	1.795	0.103	32.419	1	281	0.000
	EM	0.346	0.12	0.113	1.781	0.016	5.151	1	280	0.024
	A	0.364	0.133	0.123	1.772	0.013	4.147	1	279	0.043
	EY	0.368	0.136	0.123	1.771	0.003	1.041	1	278	0.309
	G	0.371	0.137	0.122	1.773	0.002	0.518	1	277	0.472
Job Experience Characteristics	SHRA	0.381	0.145	0.126	1.768	0.008	2.441	1	276	0.119
	CPT	0.382	0.146	0.124	1.77	0.001	0.392	1	275	0.532
	PR	0.384	0.147	0.122	1.772	0.001	0.386	1	274	0.535
Control Variable		0.788	0.621	0.598	1.2	0.473	41.461	8	266	0.000

DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SE: Standard Error.

**Table 9. The R<sup>2</sup> Changes of the Effect of the Mayor's Individual Characteristics on the Fiscal Expenditure of Education (The Proportion of Fiscal Expenditure).**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Adjusted Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Demographic Characteristics	N	0.143	0.021	0.017	3.741	0.021	5.89	1	281	0.016
	G	0.152	0.023	0.016	3.743	0.003	0.781	1	280	0.378
	EM	0.156	0.024	0.014	3.747	0.001	0.317	1	279	0.574
	A	0.160	0.025	0.011	3.752	0.001	0.31	1	278	0.578
	EY	0.160	0.025	0.008	3.759	0	0	1	277	0.983
Job Experience Characteristics	SHRA	0.174	0.03	0.09	3.756	0.005	1.34	1	276	0.248
	CPT	0.179	0.032	0.007	3.76	0.002	0.518	1	275	0.472
	PR	0.182	0.033	0.005	3.764	0.001	0.355	1	274	0.552
Control Variable		0.613	0.376	0.338	3.07	0.342	18.224	8	266	0.000

DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SE: Standard Error.

characteristics of the standing committee. However, we still do not know which characteristic independent variables would produce the greatest impact on the fiscal expenditure of education. Next, we use the stepwise method to calculate the ΔR<sup>2</sup> of all characteristic independent variables.

Among the demographic characteristics, the contribution rate of nationality characteristics is the largest (ΔR<sup>2</sup> = 0.041, n = 281, p < 0.01; **Table 6**). When combined with the regression coefficients in Table 2, it can be concluded that the secretary originated from minorities nationality will inhibit education expenditure to a large extent,



**Table 10. The R<sup>2</sup> Changes of the Effect of the Collective Characteristics of the Standing Committee on the Education Fiscal Expenditure (GDP Ratio).**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Adjusted Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Demographic Characteristics	N	0.143	0.021	0.017	3.741	0.021	5.89	1	281	0.016
	G	0.152	0.023	0.016	3.743	0.003	0.781	1	280	0.378
	EM	0.156	0.024	0.014	3.747	0.001	0.317	1	279	0.574
	A	0.160	0.025	0.011	3.752	0.001	0.31	1	278	0.578
	EY	0.160	0.025	0.008	3.759	0	0	1	277	0.983
Job Experience Characteristics	SHRA	0.174	0.03	0.99	3.756	0.005	1.34	1	276	0.248
	CPT	0.179	0.032	0.007	3.76	0.002	0.518	1	275	0.472
	PR	0.182	0.033	0.005	3.764	0.001	0.355	1	274	0.552
Control Variable		0.613	0.376	0.338	3.07	0.342	18.224	8	266	0.000

DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SE: Standard Error.

**Table 11. The R<sup>2</sup> Changes of the Effect of the Collective Characteristics of the Standing Committee on the Fiscal Expenditure of Education (The Proportion of Fiscal Expenditure).**

Dependent Variable	Independent Variable Dimension	R	R <sup>2</sup>	AR <sup>2</sup>	SE	Adjusted Statistics				
						ΔR <sup>2</sup>	F	DF1	DF2	Significant F
Demographic Characteristics	MS	0.198	0.039	0.036	3.705	0.039	11.455	1	281	0.001
	PSS	0.250	0.063	0.056	3.666	0.023	7.015	1	280	0.990
	A	0.257	0.066	0.056	3.667	0.003	0.975	1	279	0.324
	EY	0.259	0.067	0.054	3.671	0.001	0.38	1	278	0.538
	FS	0.260	0.067	0.051	3.677	0	0.064	1	277	0.800
Job Experience Characteristics	PR	0.269	0.072	0.052	3.674	0.005	1.48	1	276	0.225
	A_CPT	0.280	0.079	0.055	3.668	0.006	1.849	1	275	0.175
	A_SHRA	0.285	0.081	0.054	3.67	0.003	0.75	1	274	0.387
Control Variable		0.646	0.418	0.383	2.965	0.336	19.207	8	266	0.000

DF: Degree of Freedom; AR<sup>2</sup>: Adjusted R<sup>2</sup>; SE: Standard Error.

and that this feature should be focused more than any other demographic characteristics of the secretary.

In the secretary's tenure characteristics, the promotion rate contributed the largest component ( $\Delta R^2 = 0.052$ ,  $n = 276$ ,  $p < 0.01$ ), making it the most important focus (Table 7). From this, it can be inferred that the secretary is overly concerned with personal political promotion, and this concern is unfavorable toward improving the fiscal expenditure on education.

**Tables 8 and 9** revealed that nationality in the demographic characteristics contributed the most for the mayor ( $\Delta R^2 = 0.103$ ,  $\Delta R^2$  change = 0.021), along with the professional background and age ( $\Delta R^2 = 0.016$ ,  $\Delta R^2 = 0.013$ ). This indicates that the difference in the individual characteristics of the mayor on education finance expenditure mainly comes from nationality, professional backgrounds, and age; but not the work experience characteristics.

Among the collective demographic characteristics of the standing committee, the contribution rate of nationality is the largest ( $\Delta R^2 = 0.127$ ,  $\Delta R^2 = 0.039$ ; **Table 10** and **11**, respectively), followed by professional background ( $\Delta R^2 = 0.023$ ,  $\Delta R^2 = 0.023$ ), and then the average years of education ( $\Delta R^2 = 0.011$ ) and average age ( $\Delta R^2 = 0.013$ ); in the work experience characteristics, the current tenure had the highest contribution ( $\Delta R^2 = 0.012$ ,  $n = 276$ ,  $p < 0.05$ ). Thus, in the standing committee of the party committee, demographic characteristics are an important influencing factor on the state of education fiscal expenditure, and its importance is greater than the characteristics of work experiences.

By comparing  $\Delta R^2$ , it can be seen that the state of education fiscal expenditure is affected by the demographic characteristics of political elites and the collective characteristics of the standing committee. Each subject has its own key characteristics; it is necessary to pay attention to the nationality characteristics and promotion rate of the secretary; the nationality, professional background, and age characteristics of the mayor; the nationality, professional background, average years of education, average age, and average years of service of the Standing Committee. It can also be found that nationality characteristics in the political elite and the party committee standing committee are always the more important factors affecting the state of education and financial expenditure; for the collective, in addition to the nationality, the professional background, the average years of education, and the average age are also very important; in the impact of the tenure characteristics on the financial expenditure of education, the secretary is more likely to be affected by the rate of promotion, whereas the Standing Committee is more likely to be limited by the average length of current tenure.

## Discussion

Regression results (**Table 2**) on the effects of the political elite's individual characteristics and the standing committee's collective characteristics on expenditures on education have similarities and differences. The  $\Delta R^2$  in each dimension responds to which type of characteristic has a greater impact; the  $\Delta R^2$  of each independent variable further presents the influence of each characteristic reflecting the importance and explanatory power of each feature. Based on the empirical analysis above, we draw four main conclusions as follows.

First, local officials from minority nationalities can increase education fiscal expenditure in terms of the proportion of GDP, while at the same time restraining this expenditure relative to public fiscal expenditures. In fact, local officials from minority nationalities are mostly distributed in administrative areas with settlements of minority nationalities. Although the underdeveloped economic, the mandatory requirement of

education, the regional education financial expenditure lever is higher than the overall economic development level, and occupies an important position. However, due to the urgent need for public financial expenditures in the construction of basic public facilities and medical security in these areas, education has not maintained a priority in terms of limited public finances. This is exactly a direct reflection of the urgent needs in China's minority nationality areas, such as economic development and the contradictory public finance expenditures (Yao, 2008). It is precisely because of the realistic meaning of nationality, the characteristics of nationality have a high explanatory power, which, in turn, has a significant impact on both political elites and party committee members.

Second, the years of education of local officials are negatively correlated with fiscal expenditures on education, i.e. officials with higher education levels do not pay attention to funding education. This result agrees with Tingjin Lin (2009), Ran Song (2016), and Dingxing Wang (2017) who also found that for mayor or prefecture-level city secretary, the higher the education level was, the less local education expenditure was. Thus, elites with higher education do not improve the local leaders' passion for investing in public education. Instead, it implies that the diminishing marginal benefit of the official's own education experiences produces a negative impact on the personal cognition. Local officials, no matter on the individual or collective level, have strong desire for the political promotion, therefore, the rate of promotion has a greater influence on the secretary's decision-making of education fiscal expenditures, but this same effect is not significant for the mayor. The secretary has a stronger desire of promotion than the mayor, the reason is that the prefecture-level secretary is already the highest-ranking official at the prefecture level, so the next promotion target is a breakthrough from the prefecture level to the provincial level, and subsequently the competition is obviously more intense than that of the peers at the same level, which eventually requires more prominent political performance. Besides, given the restrictions on the age of promotion, they will easily neglect the public expenditure of education that generally has a lag of efficiency, and pay more attention to the "dominant" performance project in economic development. For the mayor, the next step is to promote further to the higher prefecture-level as a party committee secretary, the internal promotion base of the same level unit and the pressure are small, so, it is easier for them to take into account the education in the public fiscal expenditures, and to guarantee a certain fiscal expenditure in education.

Third, the political elite has a geographically-biased effect at the individual level, i.e. in terms of the special demographic characteristics of gender and serving in the household registration area or not, individual political elites tend to bring in their own emotional factors to educational financial decision-making, confirming the results of Persson and Zhuravskaya (2016) and Yiming Wang (2015). Relatively speaking, the standing committee of the party can avoid personal sensibility in collective decision-making, and is more likely to provide advice more rationally.

Finally, the differences in the professional background of the local political elites at the individual level do not significantly lead to decision-making differences. However, at the collective level, due to the collective efforts, each member can express

their own point of view on the basis of their personal cognition that depicts a significant impact of professional background, which exactly confirms the view that the local officials at the prefecture-level are “complementary” in administrative skills (Chen, 2017). Meanwhile, members of the Standing Committee who have the social science background are more inclined to spend on education than those with natural science background when make a decision collectively. This may be due to the impact of professional curriculum and professional ability, which makes them be more professional in interpreting local social phenomena and policies at length, and be greater in the preference of education development.

In summary, the prefecture-level government is affected by the different characteristics of the secretary, mayor and standing committee of local party when deciding financial expenditure on education, but the chief executive effect of the secretary and the mayor changes during the operation of the democratic centralism. Comparative analysis of models and  $\Delta R^2$  reveal that, individually, the political elites have only a few characteristics that have significant impact and explanatory power, but the Standing Committee has more collective characteristics that produce more significant influence and stronger explanatory power. This shows that the influence of the collective characteristics of the Standing Committee on education expenditure is more significant. The potential reason for this may be attributed to the stronger promotion desire of the political elite in comparison to the collective, and such promotion impulse has been “buffered” to some extent in the collective decision-making process. This also proves, at least in part, that prefecture-level governments adhere to and implement the principle of democratic centralism in the local education fiscal expenditures such as providing education as the public goods, and the collective decision-making under the leadership of the party committee plays a leading role in deciding the supply of education.

## **Conclusions and Recommendations**

Based on the 2015 data of 283 prefecture-level administrative units in China, we found that local governments embody collective leadership in education finance decision-making. Local political elites and party committee leaders have a significant impact on education expenditures, with the influence of the latter greater than that of the former. The way in which individual characteristics and collective characteristics affect education fiscal expenditure is not completely consistent; however, nationality is always an important and significant influencing factor.

Our findings not only have important theoretical significance, but also have crucial reference value to further improve the choice of local leadership behavior, to optimize of local education financial decision-making, to understand the influence of local party and government leaders on education finance and the behavioral motives of local officials under the “Chinese-style decentralization” system, and to improve the supply of local education, Based on this, we make the following brief policy recommendations.

First, rationally allocate of the structure of both local party and government officials and the standing committee, in order to reduce bias of education financial deci-

sion-making. Our data showed that the demographic characteristics of both political elites and standing committees have significant impacts on the fiscal expenditure of education. The influence of the individual characteristics of political elites will be restricted by other members of the collective, and their influence will change in collective decision-making. For example, the differences in the professional background of the local political elites at the individual level do not significantly lead to decision-making differences, but at the collective level it can produce significant impact; however, the localization of the political elite disappeared at the collective level of the party committee. Considering that officials with different characteristics have their own advantages, we believe that the Standing Committee with complementary “skills” and “characteristics” should be able to comprehensively grasp the needs of local education development and rationally arrange local education and financial expenditures. Therefore, the leadership team should be structured with special attention by combining the demographics and work experiences, and so strengthening the guarantee of financial expenditure for education from the composition of officials.

Second, adhere to democratic centralism, give full play to the advantages of collective decision-making, and encourage stakeholders to participate in education and financial expenditure decision-making consultation. Our empirical results showed that the influence of local political elite characteristics on education expenditures is concentrated in a few individual characteristics, while the characteristics of standing collectives are relatively uniform; that is, local governments insist on democratic concentration in educational financial decision-making – the embodiment of the system. Moreover, the political elite’s desire for political performance is significantly higher than that of the standing committee, indicating that officials may not fully guarantee their publicity in decision-making. Therefore, in the decision-making process, the democratic system should be fully implemented, and the decision-making process strictly observed. The core leader, as the “squad leader” and the collective “squad”, must unite and work together to make a scientific and rational decision on education fiscal expenditure (Hu & Yang, 2018).

Third, increase education fiscal support for the poverty-stricken areas, supporting financial assessment and supervising administrative measures to ensure education “precise poverty alleviation”. In the individual model of the political elite and the collective model of the standing committee, nationality characteristic has the greatest explanatory power. As mentioned above, there exists dilemma of education fiscal expenditure in the underdeveloped minority nationality areas. In recent years, a series of education poverty alleviation policies such as the “Poverty Alleviation and Implementation Program for Deprivation of Poverty in Deep Poverty Areas (2018-2020)” are strengthening education support for minority nationalities, and guarantee special funds for education and local government funds to be timely available will enable the goal of education financial support to be truly achieved (The Ministry of Education’s State Council Office, 2018). Therefore, The Third-party Evaluation Agencies should be created to guarantee an open and transparent process to improve the financial situation of education in poverty-stricken areas.

Fourth, innovate better evaluation mechanisms for appointment and removal of local government officials, convert public satisfaction with the education supply situation into performance appraisal and appointment criteria, and encourage local governments to increase education expenditure. Our empirical study revealed that government spending behavior on education finance varies by geographical, nationality and other social logic, promotion and other bureaucratic logic and by personnel incentives and other marketing logic. As the attitudes of official education expenditure are easily affected by personnel evaluation systems, so we recommend reforming the organization and personnel system as a starting point, it is possible to start with the reform of the organization and personnel system, start with “incentive engagement”, and innovate in inspiring and restricting government behavior, and improve the enthusiasm of local governments in education and financial investment. For example, the provision of education as a “soft” public goods is included in the performance evaluation - not only the performance during the current term, but also the prior performance to avoid the short-term surface project, and give far greater weight of public satisfaction etc., so as to form a multi-faceted assessment system, to build up local government and diversified action logic, and to promote local governments to make reasonable behavioral choices in public education supply.

### **Notes**

1. *For convenience, this article refers to the mayor, the governor, the governor, and the executive head of the General Administration of Administration as the mayor.*
2. *Among the 334 prefecture-level administrative units, there are 291 prefecture-level cities, 10 regions, 30 autonomous prefectures, and 3 alliances. There are 20 prefecture-level administrative units with serious socio-economic data missing: Alashan League, Shannan Distric , Sansha City, Shigatse City, Ganzi Prefecture, Nagqu District, Liangshan Prefecture, Ali District, Qiannan Prefecture, Linzhi City, Wenshan state, Golog prefecture, Chuxiong, Yushu prefecture, Diqing, Haixi, Lhasa, Kezilesukeerkezi states, Chamdo, Turpan City.*
3. *Delete 24 samples of missing features of the secretary or executive head, namely Shenyang City, Benxi City, Dandong City, Jinzhou City, Panjin City, Jilin City, Siping City, Liaoyuan City, Tonghua City, Songyuan City, Daxinganling Region, Zhangzhou City, Putian City, Sanming City, Nanping City, Xinyu City, Jieyang City, Yuxi City, Baoshan City, Zhaotong City, Nujiang Prefecture, Hainan Tibetan Autonomous Prefecture, Shizuishan City, Yili Kazakh Autonomous Prefecture.*
4. *Excluding the seven outlier samples of education fiscal expenditure as a percentage of GDP: Huangnan, Linxia, Gannan, Dingxi, Guyuan, Kashgar, and Hotan.*

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## References

- Alesina, A. F., Troiano, U., & Cassidy, T. (2015). Old and young politicians (No. w20977). *National Bureau of Economic Research*. DOI: <https://doi.org/10.3386/w20977>
- Blanchard, O., & Shleifer, A. (2001). Federalism with and without political centralization: China versus Russia. *IMF Staff Papers*, 48(1):171-179. <https://doi.org/10.3386/w7616>
- Cai, R. & Yao, J.J. (2018). An empirical study on the influence of the collective characteristics of the standing committee of the party committees at the level on the educational expenditure of education. *Research in Educational Development*, 38(17):15-20+42. [Chinese] DOI: <https://www.cnki.com.cn/Article/CJFDTotal-SHGJ201817007.htm>
- Cao, C., Ma, L., & Shen, X. (2014). Financial pressure, promotion pressure, official tenure and excessive investment by local state-owned enterprises. *China Economic Quarterly*, 13(4):1415-1436.
- Chen H.R., & Huang H.L. (2010). User acceptance of mobile knowledge management learning system: Design and analysis. *Educational Technology & Society*, 13(3):70-77.
- Chen, S., Zhou, S., & Lu, S. (2017). Official professional collocation and urban economic development: “skill complementarities” or “cognitive conflict”. *Economic Perspectives*, 2017(11): 88-103. [Chinese] <https://www.cnki.com.cn/Article/CJFDTotal-JJXD201711008.htm>
- Fu, Y., & Zhang, Y. (2007). Chinese-style decentralization and fiscal expenditure structure bias: the cost of competition for growth. *Management World*, 2007(3):4-12+22. [Chinese] DOI: <https://doi.org/10.19744/j.cnki.11-1235/f.2007.03.002>
- Government Central Committee. (1993). State education funding system for monitoring the implementation of (Trial).
- Hanaysha, J.R.M., Abdullah H.H. & Warokka, A. (2011). Service quality and students’ satisfaction at higher learning institutions: The competing dimensions of Malaysian universities’ competitiveness. *The Journal of Southeast Asian Research*, 1-10. DOI: <http://dx.doi.org/10.5171/2011.855931>
- Hu, A., & Yang, Z. (2018). Innovative Chinese collective leadership system. *Information for Decisions Magazine*, 1101(6):16. [Chinese] <https://www.cnki.com.cn/Article/CJFDTotal-JJDK201709005.htm>
- Jiang, Y., & Yi, W. (2017). Regional differences, characteristics of local officials and behaviors of educational expenditure. *Journal of Guangdong University of Finance & Economics*, 32(06):58-66.
- Johnson, J. W., & Lebreton, J. M. (2004). History and use of relative importance indices in organizational research. *Organizational Re-*

- Cai & Zhang. *Impact of Individual Political Elites and Educational Fiscal Expenditure in China. search Methods*, 7(3):238-257. DOI: <https://doi.org/10.1177/1094428104266510>
- Li, H., & Zhou, L. (2005). Political turnover and economic performance: the incentive role of personnel control in China. *Journal of Public Economics*, 89(9-10):1743-1762. DOI: <https://doi.org/10.1016/j.jpubeco.2004.06.009>
- Lin, T. (2009). The influence of mayors of prefecture level cities on expenditure of education within the budget. *Journal of Public Administration*, 1(1):175-190+205-206. [Chinese] <https://doi.org/10.3969/j.issn.1674-2486.2009.01.010>
- Lin, T. J. (2009). The influence of prefecture-level city mayors on budgetary education expenditures. *Public Administration Review*, 2(1):175-190.
- National Education Commission of the National Bureau of Statistics. (1993). National Education Funds Implementation Monitoring System (Trial).
- Olson, M.L. (2014). Translated by Chen, Y., Guo, Y., & Li, C. The logic of collective action. Shanghai: Gezhi Publishing House: Shanghai People's Publication.
- Persson, P., & Zhuravskaya, E. (2016). The limits of career concerns in federalism: Evidence from China. *Journal of the European Economic Association*, 14(2):338-374. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.683.9371&rep=rep1&type=pdf>
- Qian, Y., & Weingast, B.R. (1996). China's transition to markets: Market-preserving federalism, Chinese style. *Journal of Policy Reform*, 1(2):149-185. DOI: <https://doi.org/10.1080/13841289608523361>
- Qiao, B., Fan, J., & Feng, X. (2005). China's fiscal decentralization and compulsory primary education. *Social Sciences in China*, 2005(6): 37-46+206. [Chinese] [http://lib.cufe.edu.cn/upload\\_files/other/4\\_2\\_0140526033222\\_72\\_%E4%B8%AD%E5%9B%BD%E7%9A%84%E8%B4%A2%E6%94%BF%E5%88%86%E6%9D%83%E4%B8%8E%E5%B0%8F%E5%AD%A6%E4%B9%89%E5%8A%A1%E6%95%99%E8%82%B2\\_%E4%B9%94%E5%AE%9D%E4%BA%91.pdf](http://lib.cufe.edu.cn/upload_files/other/4_2_0140526033222_72_%E4%B8%AD%E5%9B%BD%E7%9A%84%E8%B4%A2%E6%94%BF%E5%88%86%E6%9D%83%E4%B8%8E%E5%B0%8F%E5%AD%A6%E4%B9%89%E5%8A%A1%E6%95%99%E8%82%B2_%E4%B9%94%E5%AE%9D%E4%BA%91.pdf)
- Song, R., & Chen, G. (2016). Official characteristics, experience and local government education expenditure preference: Evidence from Chinese prefectural cities. *Business Management Journal*, 38(12):149-169. [Chinese] <https://www.cnki.com.cn/Article/CJFDTotal-JJGU201612014.htm>
- The Ministry of Education's State Council Office of Poverty Alleviation issued the "Implementation Plan for Poverty Alleviation in Deep Poverty Areas (2018-2020)". 2018-7-15, [http://www.cpad.gov.cn/art/2018/2/27/art\\_46\\_79213.html](http://www.cpad.gov.cn/art/2018/2/27/art_46_79213.html)
- Tian, D., & Yu, Q. (2017). The influence of background characteristics of top management on corporate green innovation. *Research on Financial and Economic Issues*, 2017(6):108-113. [Chinese] <https://www.cnki.com.cn/Article/CJFDTotal-CJWT201706016.htm>
- Wang, D. (2017). Characteristics of local officials and public expenditure. *Journal of Nanjing University of Finance and Economics*, 2017(4):36-46. [Chinese] <https://www.cnki.com.cn/Article/CJFDTotal-NJJJ201704005.htm>
- Wang, X., & Xu, X. (2008). Source, destination, tenure and economic growth of local officials: evidence from the provincial party secretary of China. *Management World*, 2008(3):16-26. [Chinese] <https://doi.org/10.19744/j.cnki.11-1235/f.2008.03.003>
- Wang, X., & Xu, X. (2009). Political incentives, fiscal decentralization and economic behavior of local officials in the transition period. *Nankai Economic Studies*, 2009(2):58-79. [Chinese] <https://www.cnki.com.cn/Article/CJFDTotal-NKJJ200902007.htm>
- Wang, X., & Zhou, J. (2013). Heterogeneity of local officials and performance of public service supply. *South China Journal of Economics*, 2013(11):47-59. [Chinese] <https://doi.org/10.19592/j.cnki.scje.2013.11.005>
- Wang, Y., Liu, Z., & Yang, Y. (2015). Regional hemiplegia and education supply of local officials. *Business Management Journal*,



- Cai & Zhang. *Impact of Individual Political Elites and Educational Fiscal Expenditure in China*. 37(8):12-22. [Chinese]  
<https://doi.org/10.19616/j.cnki.bmj.2015.08.004>
- Xu, C. (2011). The fundamental institutions of China's reforms and development. *Journal of Economic Literature*, 49(4):1076-1151. [Chinese] DOI:  
<https://doi.org/10.1257/jel.49.4.1076>
- Yang, B., Wang, N., & Zhang, Z. (2014). Analysis of the theoretical basis of collective leadership. *Chinese Journal of Management*, 11(10):1428-1435. [Chinese] DOI:  
<https://doi.org/10.3969/j.issn.1672-884x.2014.10.003>
- Yang, Q., & Zheng, N. (2013). Local leadership promotion competition is a ruler, tournament or qualifying competition. *The Journal of World Economy*, 36(12): 130-156. [Chinese]  
<https://www.cnki.com.cn/Article/CJFDTotal-SJJJ201312008.htm>
- Yao, J. (2008). Governance of China's decentralization and balanced development of education. *Nanjing Journal of Social Sciences*, 2008(8): 119-125. [Chinese] DOI:  
<https://doi.org/10.3969/j.issn.1001-8263.2008.08.020>
- Yu, Z. (2017). Local government and public education – From the perspective of fiscal decentralization. GuangZhou: Social Science Literature Publication Press.
- Zhang, J. (2008). Decentralization and growth: The story of China. *China Economic Quarterly*, 7(1):21-52. [Chinese]  
<https://www.airitilibrary.com/Publication/alDetailedMesh?docid=a0000151-200710-7-1-21-52-a>
- Zhang, Y. (2014). Leadership team heterogeneity, conflict and management strategy in the background of collective leadership. *Leadership Science*, 2014(8):52-53. [Chinese] DOI:  
<https://doi.org/10.19572/j.cnki.ldkx.2014.08.016>
- Zhou, F. (2006). Ten years of tax distribution system: System and its influence. *Social Sciences in China*, 2006(6):100-115+205. [Chinese]  
[http://www.shehui.pku.edu.cn/upload/editor/20171116/20171116092221\\_5559.pdf](http://www.shehui.pku.edu.cn/upload/editor/20171116/20171116092221_5559.pdf)
- Zhou, L., Li, H., & Wei, C. (2005). Relative performance appraisal: An empirical study on the promotion mechanism of local officials in China. *Journal of Economics*, 1(1):83-96. [Chinese]  
[https://www.researchgate.net/profile/Li\\_An\\_Zhou/publication/281365130\\_Relative\\_Performance\\_Evaluation\\_An\\_Empirical\\_Analysis\\_of\\_Turnover\\_of\\_Chinese\\_Local\\_Officials/links/5743a10b08ae298602f0f21c/Relative-Performance-Evaluation-An-Empirical-Analysis-of-Turnover-of-Chinese-Local-Officials.pdf](https://www.researchgate.net/profile/Li_An_Zhou/publication/281365130_Relative_Performance_Evaluation_An_Empirical_Analysis_of_Turnover_of_Chinese_Local_Officials/links/5743a10b08ae298602f0f21c/Relative-Performance-Evaluation-An-Empirical-Analysis-of-Turnover-of-Chinese-Local-Officials.pdf)
- Zhu, X., & Hu, X. (2014). Institutionalization of democratic centralism: A comprehensive study of leadership system, institutional system and working mechanism. *Marxism & Reality*, 2014(3):13-19. [Chinese] DOI:  
<https://doi.org/10.15894/j.cnki.cn11-3040/a.2014.03.031>

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