

The Relationship Between the Per Capita Possession of Public Libraries' Books in Each Province and the Enrolment Rate in Regular Senior Secondary Schools

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Abstract. The secondary school entrance examination has a critical function in evaluating and selecting talent within China's education system. Nevertheless, the adoption of diversion and dual reduction policies has halted the long-standing decline in enrolment rates and has led to a reduced discrepancy between vocational and regular senior secondary schools, which further erodes student's risk-averse capacity. The landing plans vary depending on the province, and the degree of implementation of educational diversion differs, which is a cause for greater concern regarding educational inequality. Therefore, this paper examines the correlation and impact of public cultural resources, as signified by per capita possession of public libraries' books in each province, on the rate of regular secondary school enrolment across various regions. In addition, it explores into the factors that contribute to the allocation of public resources outside of the traditional spheres of schools and families, particularly in regard to the fair and inclusive nature of the secondary school entrance examinations. The logical establishment of a network of communal cultural resources could address the social need for equal opportunities in education, align with the policy for a balanced education system, and implement optimum measures to circumvent the issues arising from the discriminatory diversion of secondary school examinations.

Keywords: Middle school entrance examination diversion, Regular senior secondary schools, General vocational secondary schools, Per capita possession of public libraries' books, Cultural resources.

1. Introduction

This study aims to investigate the relationship between the per capita possession of public libraries' books in each province and the rate of enrolment in regular senior secondary schools. With the implementation of Middle school entrance examination diversion and double-reduction policies, provinces have provided varied solutions. The limitation of extracurricular education and the pre-diversion have indeed resulted in increased covert pressure on students, with the absence of cultural resources now being a more significant issue. In the context of public education, students' cultural resources are derived from the public, family, and school. The available resources vary widely, influenced by family economic status, occupation, and level of dedication. Therefore, it is challenging to eliminate the inequality in families' educational capabilities in order to thoroughly investigate the impact of cultural resources. However, the secondary school entrance examination limits student competition to within the provinces in China, presenting an opportunity to explore investment in public cultural resources on a regional basis. This study seeks to investigate whether the level of investment in public cultural resources in each province is related to the implementation orientation of the diversion policy. This will demonstrate the extent to which public cultural resources can have a practical impact and meet the broader societal needs.

2. Literature Review

Currently, there are only a few studies on middle school entrance examination diversion and enrolment ratios in regular senior secondary schools. Furthermore, there is a lack of investigation into the connection with public funding. Existing studies primarily analyze the effects of public education

investments on household expenditures and disparities in educational attainment, thus affecting diversion and enrollment. However, little attention has been devoted to the library sector within the cultural domain, specifically to the per capita possession of books in public libraries in each province and to linking this to enrollment rates. This research direction is significantly lacking in relevant findings and theories.

Existing relevant studies can be broadly classified into three categories:

2.1. Critical Research

Current critical research focuses on examining the issue of admissions, in particular the fundamental aspects of educational equity and social mobility raised by this issue, as well as evaluating the specific effects of the policy. These studies utilize Bourdieu's framework of the forms of capital in society as a theoretical foundation to distinguish and examine different types of capital and their implications. Some studies have investigated the presence of educational inequalities resulting from high school enrolment rate changes due to capital mobility bias and regional policy disparities in China's intellectually oriented education system. This amplification of potential capital gains has led to a denial of opportunities for disadvantaged groups, hindering rational mobility in Chinese society [1]. In addition, China's educational admissions system is currently undergoing a transition away from the Boston system. A prior study, using a dataset from the education sector in China, has argued that there is a non-monotonic relationship between school efficiency shifts. Further centralization of educational pressures and cuts in student benefits resulting from this shift can have a detrimental effect on all students, one example being increased difficulty in enrolling in high school [2]. A balanced enrolment ratio in regular senior and vocational secondary schools has indeed compromised educational equity. Meanwhile, a previous study has examined the difference in the ratio trends between East Asian and European countries in recent years. The study found that since 2010, the ratio in China has gradually declined, while developed countries such as North America, Western Europe, Japan, and South Korea have seen an increase in higher education penetration rates. The study also suggests that regional differences should be taken into account when gradually re-evaluating the red line for the ratio of general-purpose to vocational enrolment [3].

2.2. Quantitative Empirical Research

Quantitative empirical studies investigating factors that impact enrolment in general education colleges adhere to the contemporary sociological research empirical paradigm. Data is drawn from various databases that offer relevant social and educational analyses of the issue. For instance, using the multiple mediator model to analyze the data, it was discovered that shadow education, which is distinguished from mainstream school education, assists in diversion and boosts the possibility of students occupying an advantageous position in diversion through a range of educational activities outside of school. These activities, aimed at improving the students' skillset and personal interests, are chiefly in the form of extracurricular tuition, including tutoring, after-school classes, and hobby classes [4]. Another study, using the Blau-Duncan status attainment model, demonstrated that student academic performance was positively mediated by high parental involvement and favorable family background, with significant influences on educational triage outcomes [5]. Other researchers have developed OLS regression models based on the ideas of "Maximally Maintained Inequality" (MMI) and "Effectively Maintained Inequality" (EMI). They discovered that enhancing access to schools for various classes has led to greater equity, thereby boosting enrolment rates in regular senior secondary schools, particularly amongst the lower classes [6]. Previous research has utilized a stratified multivariate logistic regression model to identify the most substantial positive effect of social capital on enrolment, whereas cultural capital also has a positive effect, but it is weaker in comparison to social capital [7]. In addition, one study revealed that, unlike the impact on overall high school enrolment, only cultural capital had a considerable positive impact on access to educational opportunities in regular senior secondary schools [8].

2.3. Qualitative Research

Current academic qualitative research has focused on public library resources, using the PEST model to analyze the current impact of public libraries on cultural resources in primary and secondary schools, and to examine the connotations associated with the application of various aspects of public library resources. The study found that public libraries located in all provinces are capable of providing considerable cultural resources to remote areas, villages and families with limited access to educational resources. However, their influence on schools is insignificant [9]. Meanwhile, the research provides strategies to enhance the incorporation of library resources into primary and secondary education in the context of the double-reduction education policy, which is based on the public library's status [10].

3. Research Hypotheses

The per capita possession of public libraries' books in each province has an effect on the enrolment rate in regular senior secondary schools.

H0: The per capita possession of public libraries' books in each province does not have a significant effect on the enrolment rate in regular senior secondary schools.

H1: The per capita possession of public libraries' books in each province does have a significant effect on the enrolment rate in regular senior secondary schools.

4. Research Design

This study used Stata for panel regression analysis. Through the Easy Professional Superior data platform, per capita possession of public libraries' books in each province (31 provinces) in China during the period of 2011-2020, the total number of junior high school graduates in each province (31 provinces) in China during the period of 2011-2020, the total number of students enrolled in general senior high schools in each province (31 provinces) in China during the period of 2011-2020 were collected, and the used to produce the enrolment rate in regular senior secondary schools.

First, the data is analyzed using descriptive statistics and correlation coefficients. Subsequently, the OLS model, fixed effects model and random effects model are employed for further analysis. Ultimately, the final analysis model was determined through F-test and Hausman test.

5. Results

The study analyzed the rate of enrolment in regular senior secondary schools and the per capita possession of public library books in each province, with a sample size of 310. The sample's descriptive statistical analysis (Table 1) clarifies the minimum, maximum, standard error, and mean values of the data. In addition, Pearman's correlation coefficient (Table 2) was utilized to perform correlation analysis. The OLS model (Table 3), fixed effect model (Table 4), and random effect model (Table 5) all exhibit a highly significant correlation with a P-value of less than 0.01. The F-test results (Table 4) indicate significance, and the Hausman test results (Table 6) demonstrate a significant relationship. Therefore, the fixed effect model was selected. Ultimately, the study's final outcome indicates a highly significant correlation between the two variables, with a p-value of less than 0.01. The goodness of fit was 0.2367, the standard error was 0.0163178, and the correlation coefficient was 0.1515197, which is a positive correlation, indicating that the more per capita possession of public library books the provinces have, the higher the rate of enrolment in regular senior secondary schools.

Table 1. Results of descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
rate	310	.5706685	.0660792	.36355443	.7175984
book	310	.6966774	.5229932	.18	3.32

Table 2. Results of correlation analysis

	rate	book
rate	1.0000	
book	0.2414	1.0000
	0.0000	

Table 3. Results of OLS model analysis

Source	SS	df	MS		
Model	.078645514	1	.078645514		
Residual	1.27059062	308	.004125294		
Total	1.34923613	309	.00436646		
	Coefficient	Std. err.	t	P> t	[95% conf. interval]
rate					
book	.0305043	.0069864	4.37	0.000	.0167573 .0442514
_cons	.5494168	.0060826	90.33	0.000	.5374482 .5613855

Table 4. Results of fixed effects model analysis and F-test

	Coefficient	Std. err.	t	P> t	[95% conf. interval]
rate					
book	.1515197	.0163178	9.29	0.000	.1193975 .1836418
_cons	.4651082	.0115591	40.24	0.000	.4423536 .4878628
sigma_u	.0842837				
sigma_e	.03683591				
rho	.83962366				(fraction of variance due to u_i)

F test that all u_i=0: F (30,278)=21.95

Table 5. Results of random effects model analysis

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
rate					
book	.0961831	.012828	7.75	0.000	.0710408 .1213254
_cons	.5036599	.013341	37.75	0.000	.477512 .5298079
sigma_u	.09618242				
sigma_e	.03683591				
rho	.66313337				(fraction of variance due to u_i)

Table 6. Results of the Hausman test

—— Coefficients ——				
	(b)	(B)	(b-B)	Sqrt(diag(V_b-V_B))
	fe	re	Difference	Std. err.
book	.1515197	.0961831	.0553366	.0111349

b = Consistent under H0 and Ha; obtained from xtreg.

B = Inconsistent under Ha, efficient under H0; obtained from xtreg.

Test of H0: Difference in coefficients not systematic

$$\text{Chi2}(1) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$\text{Chi2}(1) = 24.70$$

$$\text{Prob} > \text{chi2} = 0.0000$$

6. Discussion

There is a strong correlation between the per capita possession of public libraries' books in each province and the enrolment rate in regular senior secondary schools.

The quantity of books available in public libraries indicates the level of investment that each provincial government has made in public cultural resources and the ratio of overall funding. As a result, the greater number of books per capita in public libraries in each province, the higher the amount of public cultural resources per capita, and the greater the capacity of each province to support the overall cultural resources. And to a certain extent, it represents the degree of importance that each

province attaches to the investment in culture and education. If additional educational resources are provided to students, the quality of education will increase during the same period. This will result in higher carrying capacity and enrollment rates for regular senior secondary schools.

7. Implications

In areas with abundant cultural resources, the increase in the percentage of students attending regular senior secondary schools obstructs the execution of the "equalization between regular and vocational education policy". The preference for regular senior secondary schools over vocational education exposes biased thinking among people.

In this regard, the government should invest more resources and support in secondary vocational education year by year and promote the publicity of secondary vocational education to make full use of its advantages, allowing it to vigorously cultivate specific types of vocational talents according to local needs. In addition, the government should provide a wider range of vocational options and a high level of technical learning, so as to get out of the dilemma of being constrained by traditional thinking and get people to accept the real impact and prospects of secondary vocational education.

Specifically, the government can promote and take advantage of two-way choice by creating higher education-oriented classes in vocational schools and vocational-oriented classes in regular senior secondary schools, and by allowing students to make a second choice with restrictions. This will make it possible for students to accept to enter vocational schools instead of letting exams determine their lives.

8. Conclusion

The study concludes that there is a strong positive correlation between the rate of enrolment in regular senior secondary schools and the per capita possession of public library books in each province. To address the relative disparity in educational quality, it is necessary to fully utilize existing public cultural and educational resources and increase investment and access. This necessitates that the government not only simply reduce enrollment in regular secondary schools, but also take advantage of wealthier cultural and educational resources to offer students the opportunity to choose. It is therefore all the more important for the government to plan the allocation of public cultural resources in a way that is consistent with efficiency by paying attention to the relationship between the per capita stock of books in public libraries in each province and the enrolment rate in regular secondary schools. In addition, the important complementary and regulatory role of public resources in education policy should be fully exploited to alleviate the problem of wasted resources and social injustice.

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