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Original Paper

Education Inequality in China: Comparison of Family Background in Shanghai and Jinzhai

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Abstract

This research aims to compare different aspects of family environment influence from both academic and economic perspectives between Shanghai, an urban city, and Jinzhai, a rural region. This research also attempts to present some potential solutions to lessen the education inequalities between urban and rural areas.

Keywords

educational inequality, education, family environment, family finance

1. Background

Chinese primary and middle schools are known to manifest unequal education achievement between urban cities and rural areas. Researchers conducted a comparison of education levels and income between coastal and inland cities, revealing similarities unless the inland cities encompass significant rural areas. This highlights the disparities existing between urban and rural areas (Qian & Smyth, 2008). After comparing urban to rural areas from 1949 to 1990, it is found out that children in rural areas lack proper education compared to children in urban cities (Hannum, 1999). Evidence supports the notion that inequalities are perpetuated by variations in the quality of teachers, infrastructure, and resources among local schools. In order to find out whether family environment in different region causes inequalities in education, this research will compare family's influence on school education achievement in Shanghai, a prosperous urban city, and Jinzhai, a rural city.

Education has been one of the main focuses of the Chinese government, however, the total expenditure on education was not able to keep up with the increasing GDP. According to The World Bank (Note 1),

in 2020, China's total education expenditure was 3.6% of the domestic GDP, while in the same year, the United States' total expenditure was 6.1% of the domestic GDP. On top of that, large amounts of education resources in China are invested in high school or college. This means that rural areas where there are fewer high schools or colleges, are not receiving enough resources.

Another key factor that influences education is family income, it is widely acknowledged that with a higher level of income, children are more likely to be offered high levels of education. According to China's Statistical Yearbook (Note 2) in 2022, the average annual income of Shanghai, an urban city, is 96011 Yuan; while Anhui, the city where Jinzhai is located, a city with large rural areas, has an average annual income of 56154 Yuan in 2022.

This is a huge inequality with Shanghai's average income 70.98% higher than Anhui's. This means children in Shanghai are more likely to receive high levels of education. According to research, education yields the highest private returns, indicating a positive relation between higher education level and income (Qian & Smyth, 2007). This matches with the realities for people in urban cities earning more income.

In order to enter high school, all Chinese students will take The Academic Test for Junior High School Students. This is a test that reflects the result of the 4-year education taken by Chinese students, including Chinese, Mathematics, English, Physics, Chemistry, Biology, Geography, Science, History, Civic Education, Art, and Physical Education. Based on the result of The Academic Test for Junior High School Students released on Zhongkao.co (Note 3), Shanghai had an overall acceptance rate of 67.1 percent, while for Luan, it was only 62.1 percent. The acceptance rate in Shanghai is not only higher, but the minimum required score for regular high school admission is also 540 points, whereas in Jinzhai, it is only 430 points—roughly 20% lower than Shanghai. This information underscores the stark reality of educational inequalities between middle school education in Shanghai and Jinzhai.

2. Data & Analysis

To further investigate how different family environment in different parts of China would influence education level of students. This research conducted a questionnaire investigation on family environments between Shanghai and Jinzhai: gathering data from middle school students, including data from 101 students in Shanghai and 225 students in Jinzhai. In order to be comprehensive, both physical and non-physical supports are taken into consideration. The questionnaire focused on two aspects: financial support and academic support to students from their family.

Academic support means the degree of how supportive parents are spiritually, mainly expectations and assistance or guiding provided to children/students. In order to measure the academic support parents or family offer to students, the questionnaire investigated in the academic expectations of parents or family have on students, the expectations are measured through academic degree (highest level of education received by one person). Both elementary school education and middle school education fall under the "Nine-Year Compulsory Education System" in China, making them mandatory for all

Chinese students. Consequently, academic degrees lower than middle school are not considered. Table 1 (below) shows the actual academic degree expectations in both absolute quantity and percentage data.

Table 1. Academic Degree Expectations

Academic expectations	Shanghai(quantity)	Shanghai(percentage)	Jinzhai(quantity)	Jinzhai(percentage)
Middle School	2	2.00%	4	1.80%
High School	0	0.00%	10	4.40%
College	59	58.40%	115	51.10%
Postgraduate	40	39.60%	96	42.70%
sample size	101	/	225	/

Figure 1 (below) illustrates the data presented in Table 1 in a more visual form.

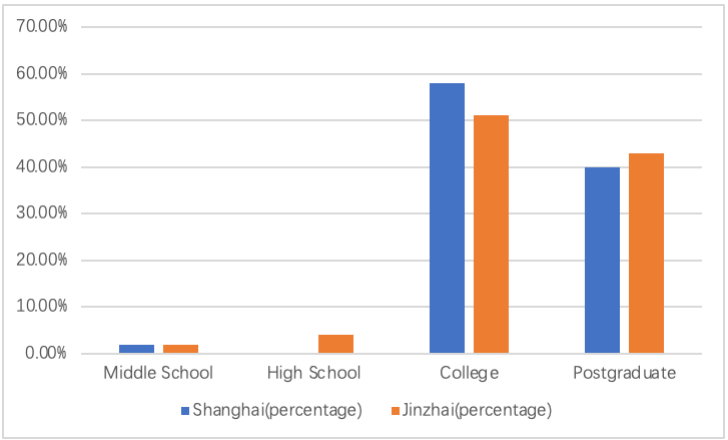

Figure 1. Academic Degree Expectations

Note that the percentage is the most important factor that is being compared as the two groups have a different sample size. Figure 1 presents a graphic image of the results, as the graph shows, the distribution of various expectations is similar. Results reach the peak for both Shanghai and JInzhai at college level education, and very few results are distributed in middle school and high school level education. This finding demonstrates that parents or families in Shanghai and Jinzhai are similarly supportive and have similar expectations for their children/students. This means students are receiving similar level of spiritual support from parents or family whether they are in Shanghai or Jinzhai. Therefore, the inequality in terms of spiritual support to students is insignificant between Shanghai and Jinzhai.

The second main influence that causes inequality given by families is financial support. Financial support are tangible objects or events provided by parents or family that help students to study. The first subject to be measured for financial support is annual family income. Table 2 (below) presents the family's annual income spanning from 0-300,000+ RMB. It is assumed that family income and the quantity of financial support on education are positively correlated.

Table 2. Family Annual Income

Income(yuan)	Shanghai(quantity)	Shanghai(percentage)	Jinzhai(quantity)	Jinzhai(percentage)
0-10,000	3	3.00%	51	22.70%
10,000-50,000	8	8.00%	111	49.30%
50,000-100,000	11	10.90%	44	19.60%
100,000-200,000	49	48.50%	19	8.40%
200,000-300,000	16	15.80%	0	0%
300,000+	14	13.90%	0	0%
Sample size	101	/	225	/

Figure 2 (below) illustrates the distribution of family annual income spanning from 0-300,000+ RMB presented in Table 2 in a visual form.

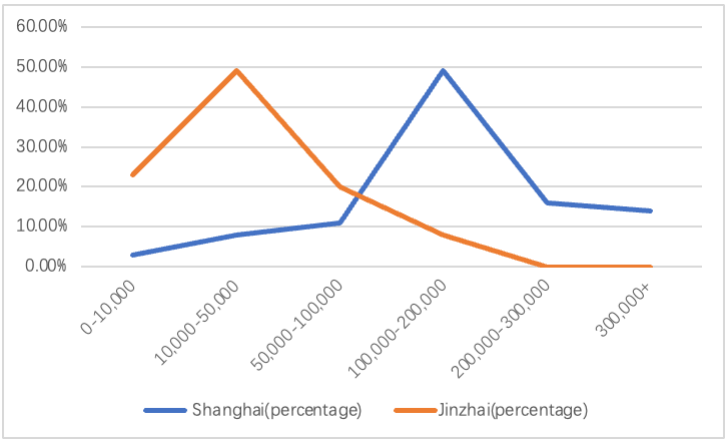

Figure 2. Family Annual Income Distribution

The table shows the annual income distribution of families in Shanghai and Jinzhai. This table reflects the amount of family that earns money at each category, starting from ¥0-10,000 per year all the way to more than 300,000 Yuan per year. The graph demonstrates the distribution of Jinzhai and Shanghai families' income level. The majority of families earn between 10,000-50,000 Yuan per year in Jinzhai, while for families in Shanghai, earns between 100,000-200,000 Yuan per year. This is a huge difference; Such an income gap signifies a substantial difference in living standards and how families allocate their limited financial resources.

To further discover how family income might be a source of academic inequality, this research investigated the participation of students in extra-curricular activities. Extra-curricular activities are common in China. The society is highly competitive, prompting students to engage in extracurricular activities to distinguish themselves in specific subjects or to explore courses not covered within the regular school curriculum.

Taking extra-curriculars is considered to be beneficial for students as it is proven to be able to increase students' academic achievements in school. This research first investigated the participation rate for extra-curricular activities of students. Figure 3 (below) shows the participation rate. Where students are

separated into two groups, the blue section representing students who attends extra-curricular, and the orange section representing students that do not attend any extra-curricular.

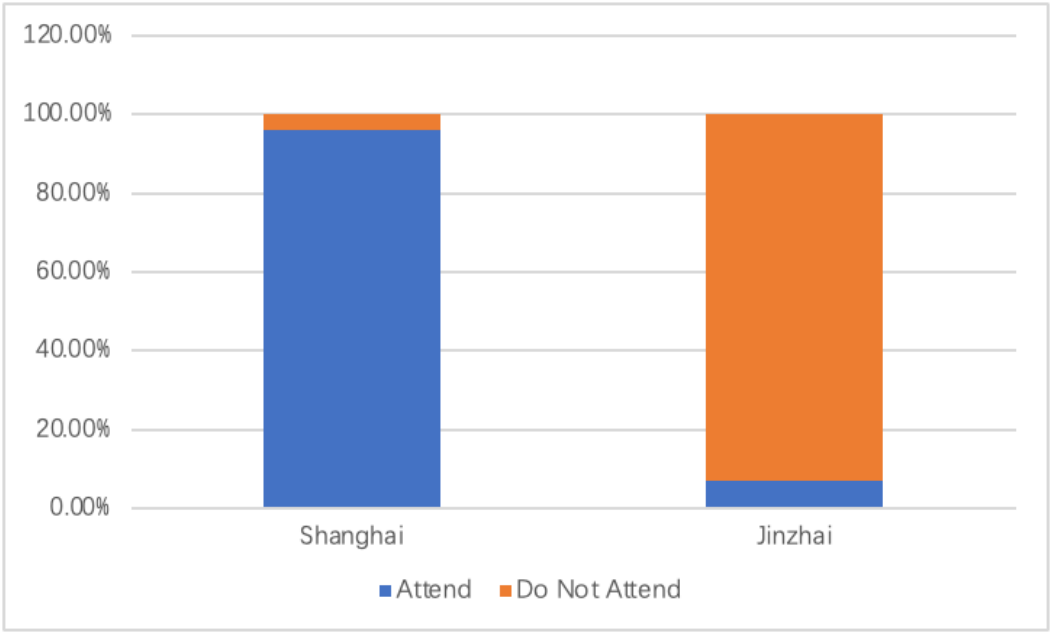

Figure 3. Extra-Curricular Participation Rate

In this survey, the subjects will answer the question by "yes" or "no". "Yes" means the student attends at least one extra-curriculum course, "no" means the student did not attend any extra-curriculum courses. The graph shows very different results between the two regions. Shanghai's students have a 96.04% participation rate in extra-curriculum courses, while for Jinzhai, it is only 7.11%. The huge difference indicates that almost every student in Shanghai receives at least one extra-curricular while most students in Jinzhai do not attend any.

This researcher also investigated the amount of money spent on extra-curricular activities annually for those that selected "yes". Table 3 (below) presents the money spent on extra-curricular activities annually for the students.

Table 3. Money Spent on Extra-Curricular Annually

money spent (yuan)	Shanghai(quantity)	Shanghai(percentage)	Jinzhai(quantity)	Jinzhai(percentage)
0-5,000	50	51.60%	11	68.80%
5,000-10,000	24	24.70%	3	18.80%
10,000-50,000	15	15.50%	2	12.50%
50,000-100,000	4	4.10%	0	0%
100,000-200,000	4	4.10%	0	0%
200,000+	0	0%	0	0%
sample size	97	/	16	/

Figure 4 (below) illustrates the data of money spent on extra-curricular annually presented in Table 3 in a visual form.

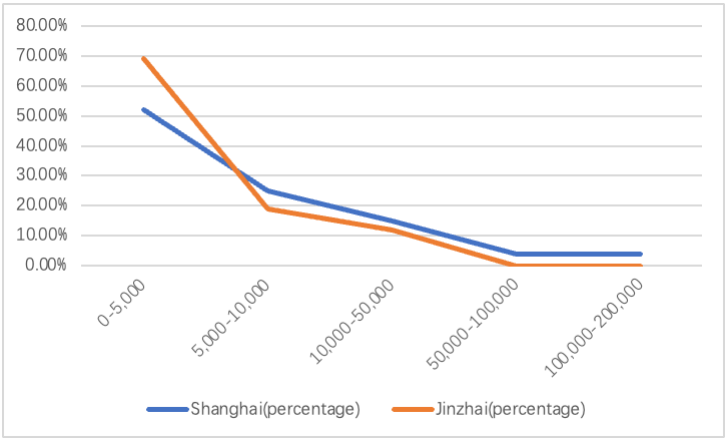

Figure 4. Money Spent on Extra-Curricular Annually

Table 3 and Figure 3 demonstrate the amount of money spent on extra-curriculum annually. The results show a similar pattern where the majority spends between 0-5,000 Yuan on extra-curriculum for students, and continues to decrease as the amount of money spent increases. This suggests that people in Shanghai and Jinzhai that are capable of providing their kids extra-curriculum have similar behaviors. However, because the majority of students in Jinzhai do not participate in any extra-curricular, the effective sample size for Jinzhai is too small.

Another type of physical support is study tools. In recent years, schools have begun to promote the use of electronic gadgets to assist the learning process of students. Such electronicgadgets include tablets, word memorizing machines etc. These gadgets are necessary in helping students to learn. Therefore, this research investigated on the amount of money spent annually on these high-tech gadgets. Table 4 (below) demonstrates the amount of money spent on educational gadgets annually.

Table 4. Amount of Money Spent on Educational Gadgets Annually

money spent (yuan)	Shanghai(quantity)	Shanghai(percentage)	Jinzhai(quantity)	Jinzhai(percentage)
0	8	7.90%	137	60.90%
0-5,000	40	39.60%	78	34.70%
5,000-10,000	35	34.70%	9	4.00%
10,000+	18	17.80%	1	0.40%
sample size	101	/	225	/

Figure 5 (below) illustrates the distribution of the amount of money, spanning from 0-10,000+ RMB, families spend on educational gadgets annually presented in Table 4 in a visual form.

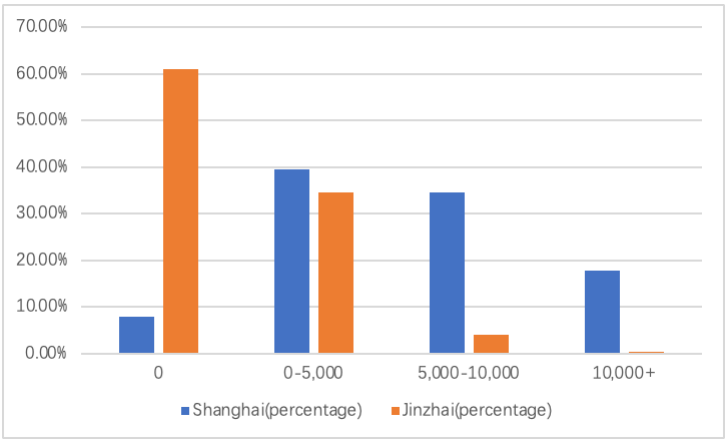

Figure 5. Amount of Money Spent on Educational Gadgets Annually

Table 4 and Figure 5 shows the amount of money used on purchasing these educational gadgets. The result shows up to 60.89% of the families in Jinzhai do not purchase any educational electronic gadgets. Among the rest of the families, 88.64% of the families spend no more than 5000 Yuan in purchasing these gadgets. As the percentages are even in Figure 5 at the 0-5,000 Yuan price gap, almost all Shanghai's student spends money in purchasing these gadgets and 52.47% of the students spend more than 5000 on these gadgets. This significantly increases the efficiency and convenience of education for students in Shanghai compared to Jinzhai.

3. Conclusion and Potential Solutions

Based on the results of the investigation and the analysis, we have found that students today have similar levels of family support. It has been inferred that people in underdeveloped inland regions now recognize the value of education and no longer maintain the stereotype of "only farming can feed us."

The major family influence that still exists is financial support to students. The financial capability for families are the main cause of inequalities within families. Annul income for underdeveloped areas like Jinzhai is much lower compared to urban cities like Shanghai. Family income in Shanghai is much greater than in Jinzhai. This is a huge difference that leads to inequalities in education related territories. Nearly all students in Shanghai have at least one extra-curriculum outside of school. Very few students in Jinzhai take at least one extra-curriculum.

In a competitive society, students in underdeveloped areas have less chance of getting a high level of education. A large factor of this is because income, most families in Jinzhai cannot afford the high prices of extra-curriculum for their children. A lower income also results in fewer modern study tools, such as iPads. These contemporary tools can significantly enhance study efficiency.

Both mental and financial support from parents or families are important in terms of influencing students' education. Underdeveloped regions like Jinzhai still have lower acceptance rates on 'The Academic Test for Junior High School Students'. It is crucial to improve their ability to offer students physical support to reduce such inequality.

The primary reason these regions remain underdeveloped is that their populations are dispersed in smaller villages or towns rather than concentrated in larger cities. This means they are essentially a closed economy where there are low trade activities. This hinders the economy from keeping pace with the growth rate observed in urban cities. A viable solution would be to initiate reforms within the communities in these regions. The government may help the citizens to migrate to near by urban cities that are geologically better located by providing apartments. This can potentially solve lots of inconvenience such as transportation. This can also allow governments to cease building roads for the minority living in the mountains, saving a major expenditure in the poverty alleviation process. Thereby providing multiple benefits such as easier transportation, production diversity, promoting high-quality developments and allow local economy to thrive.

4. Suggestions for Further Research

In this paper has enumerated various factors that contribute broadly to education inequality in China. Future researchers should collect empirical data to conduct a more in-depth analysis of inequalities, with the aim of potentially addressing educational injustices.

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Notes

Note 1. The World Bank is an international institution that provides loans and grants

Note 2. China's Statistical Yearbook is an annual statistical publication that reflects the economical and social development of China during a year, it is published by the National Bureau of Statistics of China.

Note 3. Zhongkao.com is a website build in 2008, it provides information about The Academic Test for Junior High School Students.