The Inequality behind Chinese Tertiary Education Entrance Examination Gaokao Due to Regional Difference

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Abstract: This essay mainly focuses on investigating the inequality of Chinese tertiary education entrance examination system due to regional differences. As students in rural areas have fewer chances to enter elite universities compared with those in metropolitan cities due to some specific reasons. Therefore, it influences the career prospects of those students from rural areas like Henan and Gansu, which will make the regional economic growth gap between different provinces even more serious as fewer rural-area-students' productivity can be improved through tertiary education. This issue has far-reaching influences on the whole economic condition of China and should be solved as soon as possible.

1. Introduction

The Chinese national college entrance exam-locally termed 'Gaokao', is one of the most important social issues Chinese people in all ages and social classes concerned [1]. As most Chinese highschool graduates must enter this exam when they graduate from senior high schools and want to enter universities, the importance of this exam cannot be overstated. Since 1977, China has restarted its modern national unified enrollment of universities through the national entrance exam system, and this tradition has been continued since now. [2] In 2021, the registration population reached 10.71 million and that of 2019 was 1031 million. [3] Thus, it could explain why the event happened every year in June always gives rise to a fierce social discussion. However, during the past decades, a heated discussion has generated from high school students in different regions expressing their dissatisfaction or protests about the unfair Chinese Gaokao system, especially for the inequality caused by the regional difference. [4] Most students from Henan or Gansu complained about the viscous competition and their few opportunities compared with students from metropolitan cities such as Beijing and Shanghai to get into a good university, such as "985" or "211" universities. Chinese project "211" is a new initiative of the Chinese government to build 100 institutions of higher education and key disciplines in the 21st century. There are overall 112 universities in project 211. Those schools which belong to the "211" project represents the high quality of their education and give the students who received education there more advantages when they compete with other participants who want to get the job, because students in "211" universities are usually seen as capable and diligent. Apart from that, project "985" is an even more advanced project compared with "211" and consisting only 39 elite universities in China, which includes Tsinghua University and Peking University. It was declared by Jiang Zemin in 1998 that China must have a number of first-rate universities of international advanced level. Students from "985" are considered as to be the best future workforce in China and are especially be favored by human resources managers in big firms. [5]

However, the distribution of numbers of "985" universities is considered as quite unequal among different regions in China. For example, there are 10 "985" universities in Beijing. While there is zero "985" universities in Henan, which was a surprising result. It could be imagined that how the

discrimination due to region difference matters for a student in such areas like Henan for getting into a good university. [6]

Hence, this impact is serious because it influences the chance for students to get good career prospects in the future as their skills and productivity cannot be improved through higher education and their future productivity will directly influence the output, economic growth, and regional inequality within China. [7]

The above gives rise to the topic this essay would like to discuss---- the inequality for students from different provinces to get into the same university through Gaokao. The main aim of this study is to investigate the size of inequality for students who takes the national college entrance exam. After which it will analyze the relationship between the degree people finally get in tertiary education and their average productivity or income to emphasize the significance of education to people's well-being. Finally, it will find out how close the relationship between labor's productivity and regional economic growth gap to emphasize how serious the education inequality is for the even distribution of income or stable economic growth in a country.

2. Methods

This essay aimst to illustrate the size of inequality for students who takes the national college entrance exam through the data of acceptance rate, number of students who enter top 2 universities from different regions and difference in passing scores. The reason for choosing Peking and Tsinghua is that they are the top two universities in China. From the latest ranking of Chinese universities from Times, Peking University and Tsinghua University are both ranked as 16th in the world, which represents their highest education quality among all universities in China and their unique and incontestable prestige in every Chinese people's heart. [8] Additionally, it would mainly focus on Tsinghua University as it had slightly higher ranking than Peking in the past few years, thus it could represent the best university in China, [9] Apart from that, passing scores could be used as a standard of level of difficulty to enter into a university, and this essay would focus on the comparison between rural areas and metropolitan cities like Henan and Beijing. The reason for choosing these two cities for comparison is that they have similar level of difficulty of their exam paper, Other big cities like Shanghai has quite big difference between exam papers compared with other regions', especially for its English paper. [10] Therefore, choosing these two cities and universities in detail could be more direct and easier to use control variables to operationalize the difficulty of students from these two areas.

The research method used in this thesis is quantitative through anniversary government-collected data from official websites, because numerical data is more intuitionistic to do measurement, comparison, categorizing and ranking. [11] As the issue this paper aims to discuss is a practical problem, the data collected from the government reports or university official reports of each year is expected to be more reliable than other approaches such as questionnaires because the data was about population, acceptance rate, which could be impossible to collect if had no access to the intimate data from universities. [12]

The data collected was all from official statistics websites, both domestic and foreign ones. This includes sources such as State Statistics Bureau in China and …. The statistics retrieved from government documents include collection of enrollment number of each university like Peking University and Tsinghua University, "985" universities and "211" universities, demographic census of different regions such as Beijing and Henan, which were more reliable methods compared with private survey as only government has some access to some classified data such as university enrollment number. The criteria used to select the material was the data was that the data must within this decade, as the number of exam entrants, population and acceptance rate changed each year, the data within these 3 years could be more reliable and closer to today's situation. [13]

3. Results

Firstly, from research, it could be observed that the group of people who received tertiary education only took 4% of the whole population in China. [14] While this figure is 53.5% in Russia and 51.3% for Canada. [15] For those top universities in China such as Tsinghua University, the national acceptance rate was only 0.03%, which means only 3 students per 10,000 entrants who participated in the national entrance exam each year could be accepted by Tsinghua University. While the elite university Oxford in Britain had an acceptance rate of 16.4% for those who have applied for it. [16]

Table 1. Data about Chinese Gaokao in different regions

	Beijing	Shanghai	Henan	Gansu
Acceptance rate (number of students who entered Tsinghua University per 10,000 entrants)	46.9	16.6	1.9	1.6
Passing score for Tsinghua	699	/	684	/
Percentage of students who entered into "211" university who entered Gaokao	25%	13%	2.61%	/
Number of students entered Gaokao in 2021	52,000	50，000	7,907,000	2,459,000
Number of public universities	93	75	57	49

As the graph shows, the average number of students getting into Tsinghua University per 10,000 Beijing college entrance exam entrants was 46.9, while the figure of those from Shanghai, Henan and Gansu was 16.6, 1.9 and 1.6 respectively. [17] From the prospective of number of students who entered into "211" university in China, which were some relatively good universities, the figure of Beijing was 25%, while Shanghai and Henan were 13% and 2.61% respectively. [18]

Behind the huge difference was the inequality in passing scores and population difference. The data in the table showed that the lowest score for a Beijing student to enter Tsinghua University was 684, while the lowest score of Henan students was 699. [19] There is a difference of 15 points, which is a significant figure. The score line is the most visual signal to show the difference in difficulty of entering the same university, so the inequality is obvious. On the other hand, the existence of such imbalance may be caused by the difference in local population and universities' different quota size for different regions. As the data above showed, the number of students entered Gaokao in 2021 in Beijing was 52,000, which was only 1/15 of that of Henan, which is a surprising ratio, and the figure for Shanghai was 50, which was even lower than that of Beijing. [20] Apart from that, the number of public universities in Beijing was 93 and the number of Shanghai was 75 while the figure of Henan and Gansu was 57 and 49 respectively. [21]

As the data above shows, the region where students take the entrance exam to some extent determined the chance for them to get into a good university. Then there is some evidence of data which illustrates why this problem of inequality is serious for Chinese government to solve. The average years of schooling of people in Beijing is 12.64 years while the average year of schooling in Henan was 9.79 years [22] Apart from that, the number of people who have a bachelor degree or above in Beijing was 117440 while the number of Beijing was 419800. [16] If considering the total amount of population, this discrepancy will be even more obvious. The percentage of population who had a bachelor degree or above in Beijing was 35%, which is significantly higher than the 3.2% in Henan. [23]

Therefore, it can be concluded that the average level of higher education Beijing students got was no doubt much higher than those of Henan through the national entrance exam. Latest data shows that GDP per capita in Henan in 2020 was 56400 yuan. The figure of Beijing was 164900 yuan, which means the average income in Beijing was almost 3 times higher than that of Henan. [24] These figures could be used to prove the positive relationship between income and education level.

4. Discussion

Firstly, from the data collected, it was obvious that the higher education resources in China is relatively scarce compared with those developed countries, so the opportunity for every single student to enter university is even more precious. The problem of scarcity will be exacerbated by the inequality due to regional difference, as students from rural areas will have even fewer opportunities to enter top universities.

From the perspective of different number of students getting into elite universities from different regions, it is could be seen that the number of students from metropolitan cities such as Beijing, Shanghai or Tianjin were well above the figure of Henan and Gansu, which are less developed regions.

Then we can consider that the economic well-being in a region to a large extent determined the chance of getting into a good university. As those regional governments in developed cities such as Beijin usually pay more attention on the quality of education and invest more money in improving the quality of teachers throraining and build better high schools to give more students opportunities to prepare for their college entrance exam, it might seem natural that those students in developed areas have higher skills and thus higher scores to compete with students in rural areas in the national exam.

However, the evidence in real life might be contradictory to prior theoretical beleifs. The high rate of entrance rate to good universities for students in Beijing was the result of lower passing score compared with the students in Henan for the same exam. This was the root of inequality of the exam system. What's more, there were additional points added to local students of their Gaokao score if they apply to local universities. As there are far more great universities in the capital of China, students in Beijing therefore had more advantages to get into their local elite universities.

Then, as the average high-income level of Beijing provided students with more access to high quality primary education as well as the local protectionism of Beijing students, the higher average education of students in Beijing provided them more access to high-income jobs than other high school graduates in other regions due to their higher ability or productivity. This created greater and greater gaps between provinces within China.

Education is directly related to productivity. [25] From agricultural sector to tertiary sector, so giving more equal opportunities for students to get higher education from different regions in China will ensure the gap between their local economic development growth compared with the economic growth in capital city is not being enlarged. From the perspective of agriculture, farmers' education level determines their use of fertilizers or other modern inputs such as advanced machines, which will influence their efficiency to produce food and their total output. [26] From the perspective of secondary technology, education is an important factor to technological capability in an industry. One theory about externality suggested that the increased education of individuals raises not only their own productivity but also others with whom they interact, so the total productivity of this region will rise. If the number of students who received higher education in every province have no big difference, their productivity and output gap may be cut in the future.

5. Conclusion

This paper discussed the regional inequality of entering elite universities in China, it could be contended that the size of relative inequality between regions for high school students to enter universities is actually very huge due to local protectionism quotas and different passing scores, and this inequality will make students from rural areas lose opportunities to get into a good university and improve their future development or even the regional future development as education level is strongly related to their productivity and incomes. If the problem is not solved, more complaints will be expressed by entrants in rural areas and some methods such as deliberate migration to get higher possibility to get into a better university through this exam will emerge.

The unique education system in China is different from other countries like Britain and America, who adopt other various kinds of standards to enroll students, such as interviews, recommendation

letters and IB, A-level scores. The only standard for Chinese universities to enroll students is from their academic scores. This method seems very strict and objective, since seems everyone have equal opportunity to enter elite universities. Therefore, the inequality arised from Gaokao should be concerned by government to provide more opportunities for rural area students to pursue their future well-being. For example, it should solve the problem from enlarging the overall education resources in China, especially increasing the number of elite universities in regions like Henan to reduce the fierce competition between students from different areas entering themselves for the same university in Beijing or Shanghai.

As it is an important idea that the education resources should be equally distributed among the country, instead of allocating all the resources around the central part, so that students from different area can enter local universities to prevent competition between different regions causing unfair competition and scarcity. Receiving education is important for everyone in the world to find good jobs, no matter in China or in other countries. As people's income are tightly connected with their productivity, education improvement will raise the domestic economic growth by increasing regional GDP. Reallocating education resources should be concerned by every government in the world to pursue future economic development and reducing regional economic inequality.

References

[1] William Goldstick (2010) The Gaokao Examination-A Shadow behind China's Education System. https://www.academia.edu/3692103/The_Gaokao_Examination_A_shadow_behind_Chinas_educati onal_system.

[2] Dan Liu (December, 2016) Challenges of The Gaokao System in China- Access and Equity. https://www.researchgate.net/publication/318036068_Challenges_of_the_Gaokao_System_in_Chin a_-_Access_and_Equity.

[3] China's College Entrance Exam Starts Amid Tightened Epidemic Prevention (2020, July) http://www.china.org.cn/china/2020- 07/08/content_76248919.htm#:~:text=A%20total%20of%2010.71%20million%20Chinese%20stud ents%20Tuesday,in%20Beijing%2C%20capital%20of%20China%2C%20July%207%2C%202020.

[4] Chris Hamnet (January, 2019) The Reproduction of Regional Inequality Through University Access: The Gaokao in China. https://www.researchgate.net/publication/330692183_The_reproduction_of_regional_inequality_thr ough_university_access_the_Gaokao_in_China.

[5] Admission Platform for Study in China (2021) http://www.besteduchina.com/universities_of_211_project_and_985_project.html.

[6] Admission Platform for Study in China (2021) http://www.besteduchina.com/universities_of_211_project_and_985_project.html.

[7] Eileen McGivney and Rebecca Winthrop (July, 2016) Education's Impact on Economic Growth and Productivity https://www.brookings.edu/wp-content/uploads/2017/12/educations-impact-on-productivity.pdf.

[8] Brian Schmidt (April, 2016) Interview with Prof. Brian Schmidt http://astro.tsinghua.edu.cn/~smao/mr_science/schmidt.pdf.

[9] 2021 Chinese University Ranking (2021) https://www.4icu.org/cn/.

[10] Bridget O'Donnell (July, 2020) 30 Absolutely Insane Questions from China's Gaokaohttp://www.thatsmags.com/shanghai/post/19325/30-absolutely-insane-questions-from-china-s-gaokao-exam.

[11] Eyisi Daniel (2016, November) The Usefulness of Qualitative and Quantitative Approaches and Methods in Researching Problem-Solving Ability in Science Education Curriculum https://files.eric.ed.gov/fulltext/EJ1103224.pdf.

[12] National Institute of Health (2007) How Can Covered Entities Use and Disclose Protected Health Information for Research and Comply with the Privacy Rule? https://privacyruleandresearch.nih.gov/pr_08.asp.

[13] Helena Mary Priest, Michael Trynor, Paula Roberts (2006, June) Reliability and Validity In Research
https://www.researchgate.net/publication/306332255_Reliability_and_validity_in_research.

[14] Tsinghua University Acceptance Rate (2019, April) https://www.acceptance-rates.com/tsinghua-university-acceptance-rate/.

[15] Lucie Jeudy (July, 2021) Education in Canada - Statistics & Facts https://www.statista.com/topics/2863/education-in-canada/.

[16] Funsho Alvina (2021, November) University of Oxford Acceptance Rate For International Students https://collegelearners.com/university-of-oxford-acceptance-rate-for-international-students/#:~:text=What%20is%20the%20University%20of%20Oxford%20Undergraduate%20Acceptance,%20%203%2C216%20%201%20more%20rows%20.

[17] Tsinghua University Acceptance rate (2021) https://edurank.org/uni/tsinghua-university/.

[18] China Daily (2017) http://www.chinadaily.com.cn/china/2017-10/17/content_33370581.htm.

[19] Scoreline of Tsinghua University (2021) https://www.statista.com/statistics/1139377/china-number-of-universities-in-beijing/.

[20] C. Textor (2021, January) Number of Public Universities and Colleges in Beijing, China From 2009 to 2019 https://www.statista.com/statistics/1139377/china-number-of-universities-in-beijing/.

[21] C. Textor (July, 2021) Number of Public Colleges And Universities in China in 2019, by Region https://www.statista.com/statistics/227314/number-of-universities-in-china-by-region/#statisticContainer.

[22] Bulletin of the seventh National Census (2021, May) http://www.stats.gov.cn/ztjc/zdtjgz/zgrkpc/dqcrkpc/ggl/202105/t20210519_1817699.html.

[23] Leslie Malone (February,2021) Census Bureau Releases New Report on Bachelor's Degree Attainment https://www.census.gov/newsroom/press-releases/2021/bachelors-degree-attainment.html.

[24] C. Textor, (Nov 27, 2020) Per capita gross domestic product (GDP) of Henan province, China from 2010 to 2019 https://www.statista.com/statistics/1082660/china-per-capita-gdp-of-henan/#:~:text=Per%20capita%20GDP%20of%20Henan%20province%2C%20China%202010-2019, in%20Henan%20had%20amounted%20to%20approximately%2052%2C100%20yuan.

[25] Eileen McGivney and Rebecca Winthro (July,2016) Education's Impact on Economic Growth and Productivity https://www.brookings.edu/wp-content/uploads/2017/12/educations-impact-on-productivity.pdf.

[26] Eileen McGivney and Rebecca Winthro (July,2016) Education's Impact on Economic Growth and Productivity https://www.brookings.edu/wp-content/uploads/2017/12/educations-impact-on-productivity.pdf.