



No more well-educated students from poor families? The Impact of Higher Education Expansion on Inequality of Educational Opportunity

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Abstract. Higher education inequality has attracted widespread attention in China, and children from lower-class families are significantly disadvantaged in terms of higher education opportunities. There has been no existing research that uses modeling to explicitly explain the mechanisms underlying changes in inequality levels. This paper will focus on using model deduction to develop theoretical analysis to enhance the logical consistency and realistic coherence of the research. Both higher education opportunities and advanced higher education opportunities are unequal among social classes. In terms of the number of higher education opportunities, the inequality of higher education opportunities among classes has been alleviated with the expansion of enrollment, as the expansion of higher education weakens the effect of family income on the probability of enrollment, and the probability of student of low-income families entering college increases faster than that of high-income families.

Keywords: Higher education inequality, Higher Education Expansion, Model deduction

1 INTRODUCTION

Since 1999, the enrollment scale of higher education institutions in China has expanded rapidly, and higher education has moved from the elitist stage to the mass education stage. The rapid expansion in higher education in a short period of time has brought about a real-life debate about the benefits of higher education in the labor market.

In 2007, the Asian Development Bank (ADB) introduced the concept of inclusive growth, expressing the pursuit of economic and social harmonization, It is an expression of the pursuit of coordinated and sustainable economic and social development. Since 2009, especially after the 18th Party Congress, our leaders have repeatedly proposed the concept of "inclusive growth". The so-called inclusive growth is economic growth with equal opportunities. Its fundamental meaning is that the fruits of economic growth are shared by all. It also shows that China's economic development strategy has shifted from the crude development mode of pursuing a high GDP growth rate in the past to a development mode that emphasizes the quality of economic growth. While

paying attention to the GDP growth rate, we are also ought to pay sufficient attention to the issue of social equity. Therefore, in this paper, we will not only pay attention to the impact of the expansion of higher education on economic growth, but also consider how the expansion of higher education affects social equity. The social equity concerned in this paper mainly includes two aspects: The first one is whether opportunities for higher education are equitably shared by children from all social classes; The second is whether children from lower-class families can realize upward mobility relative to their parents through education.

Another characteristic of the development of higher education in China is the unequal distribution of higher education among regions. This inter-regional inequality is reflected in two aspects, namely, the uneven distribution of colleges and universities on the one hand, and the huge difference in the admission rate of the college entrance examination between regions on the other. In 2015, for example, the admission rate of Beijing's college entrance examination in 2015 was 90.35%, and the rates of undergraduate and first-year students were as high as 64.89% and 24.9%, respectively. It is easy to see that the distribution of tertiary education varies greatly from province to province. As for the labor market, it is difficult for college students to find jobs in the eastern part of the country, while in the central and western parts of the country, they are in great demand for talents. Will the regional differences in the distribution of higher education hinder the optimal allocation of higher education talents?

In terms of social mobility, we can often observe the phenomenon of the "second generation of officials", the "second generation of the rich" and the "second generation of farmers" in our society, which shows that the intergenerational inheritance of occupations in our country is prominent. It is difficult for children born in low-ranking families to move upward through their own efforts, while children of fathers with higher social status, such as state and social managers, entrepreneurs, professionals and technicians, seldom move downward, and the rate of intergenerational mobility is low. At one time, higher education, as elite education, was the most important way for individuals to move upward. Children from the lower classes could obtain quality higher education through hard work and study, and after graduation, they could engage in occupations higher than their parents', thus realizing upward mobility, and "knowledge changes one's destiny" was the "slogan" of society at that time. Knowledge changes destiny" was the slogan of society at that time. However, with the continuous expansion of tertiary education, tertiary education nowadays has become mass education, which makes the promotion of upward mobility by tertiary education no longer what it used to be, and the theory of "studying is useless" has sprouted in social opinion.

On the other hand, as the number of university students trained in higher education continues to increase, the economic structure will also be affected. Specifically, technological advancement will favor technology-intensive industries, thus increasing the demand for skilled people with university degrees in the labor market, and providing more opportunities for upward mobility for lower-class families. Does education still promote upward mobility of individuals in today's society, and how will the expansion of higher education affect the social mobility of individuals?

On the one hand, there is the increase of the "useless study theory", which argues that the expansion of higher education in China has brought about the expansion of

diplomas and the sharp increase in the number of graduate students in China's labor market. On the other hand, some scholars argue that the expansion of higher education has already adapted to the changes in the economic situation and the structure of the labor market because of the market transition, and has resulted in a limited impact on the wages of university graduates and the rate of return on education.

China has already implemented a highly internalized education system at the higher education stage, which is manifested in different training trajectories, quality and levels of training, and is referred to by academics and scholars as the phenomenon of higher education streaming. The key university system is the specific embodiment of higher education streaming. The phenomenon of internal streaming at the higher education stage in China has become particularly prominent and significant in the context of expansionist policies, further complicating the return mechanism of higher education.

Intuitively, higher education expansion can promote social equality by enabling more students from lower-class families to receive higher education. In reality, however, the issue of higher education inequality in China has attracted widespread attention in recent years, and children from lower-class families are significantly disadvantaged in terms of higher education opportunities. Higher education expansion has not lessened the inequality of educational opportunities between classes, rather, it even tends to widen.

Regarding the discussion of educational inequality of opportunity in higher education, some scholars have concentrated on the triggers of the educational inequality. Sieben and de Graaf (2001) suggests that family origin and relevant resources will influence the children's educational access, educational attainment and occupational status[1]. Family background influence children's educational opportunities mainly through cultural reproduction and family resource transformation. Sullivan (2001) indicates that cultural reproduction is able to provide and support only a partial explanation of social class differences in educational attainment[2]. Lareau and Weininger (2003) emphasize the cultural reproduction theory[3], which suggests that the cultural capital of the parents facilitate and enhance children's cognitive and learning abilities, as well as develop a better and effective family learning environment, which is going to enhance children's performance and make children more likely to obtain a quality education.

In one hand, Becker and Murphy (1990) indicates that the education sector utilizes human capital more intensively than either the capital producing sector of the goods producing sector[4]. While Becker and Tomes (1979) emphasize the influence of family resource transformation on children's educational opportunities, arguing that families with economic and social capital are able to increase their children's educational opportunities by investing in their children's education or utilizing the family resources to intervene in their children's enrollment at the final stage[5]. On the other hand, low-income families' poor risk-taking ability for enrollment or low expectations of educational benefits, which will make their children of low-class families withdraw from higher education competition, and eventually lead to inequality in educational opportunities for their children with different family resources.

Another part of the research focuses on the evolution of the inequality of educational opportunities during the process of educational expansion. One of the parties argues

that educational expansion may lead to an increase in inequality in access to educational opportunities. For example, Raftery and Hout (1993) proposed the MMI hypothesis[6], which argues that the additional educational resources are first plundered by the upper class of society and that educational expansion is able to only benefit the lower and middle classes when the upper class is saturated with educational demands.

Furthermore, Lucas, based on MMI, emphasizes that educational inequality is also reflected in the quality of education. Lucas points out that even if the educational needs of the upper class are satisfied, the educational resources left for the middle and lower classes are of low quality, which will maintain the unequal situation of educational access among classes, as well as this theory is called the EMI hypothesis. In addition, Blanden and Machin (2013) also analyze the United Kingdom and show that the influence of family class on children's educational attainment has not diminished and may be increasing[7]. Treiman (2013) suggests that the higher education expansion in China has not reduced the inequality of educational opportunities and there may be an increase in the educational inequality among classes[8].

The other side of the argument tends to claim that educational expansion helps to reduce inequality in access to educational opportunities. For example, empirical studies based on data from the Netherlands (Sienben and de Graff, 2001) show that educational expansion helps to reduce inequality of educational opportunities[1]. Wu (2009) argues that the transition to a socialist system and educational expansion in China after the successful revolution improved inequality of educational opportunities for a period of time, but then family background again played a stable and persistent role[9].

2 RESEARCH OBJECTIVES

There has been no existing research that uses modeling to explicitly explain the mechanisms underlying changes in inequality levels. This paper will focus on using model deduction to develop theoretical analysis, on top of which econometric tests will be combined to enhance the logical consistency and realistic coherence of the research.

3 THEORATICAL ANALYSIS

$$\text{The Utility of Income: } U_j = \log W_j \quad (1)$$

$$\text{Cost of Higher Education: } C_{ij} (\text{Expan, Ecoi, Comi, Diffj}) \quad (2)$$

U_j : Income Utility

W_j : Individual's Income

C_{ij} : Higher Education Cost

Expan: The degree of higher education expansion

Ecoj: Individual's household economic level

Comi: Individual's Competency

Diffj: Difficulty of higher education enrollment. Can be divided into advanced and ordinary universities.

When the university entrance examination in China becomes more and more difficult and challenging, individuals will put in more effort, which will result in a significant increase in the cost, $\partial C_{i1}(\text{Expan}, \text{Ecoi}, \text{Comi}, \text{Diff1})/\partial \text{Diff1} > 0$. With higher education expanding in China, Expan is increasing, as well as the cost of effort to enter an ordinary university is decreasing, $\partial C_{i1}(\text{Expan}, \text{Ecoi}, \text{Comi}, \text{Diff1})/\partial \text{Expan} < 0$.

Better-off families are able to decrease the difficulty and challenge regarding getting their children into ordinary universities by investing more in family education, choosing higher-quality schools or attending extracurricular classes for their children, $\partial C_{i1}(\text{Expan}, \text{Ecoi}, \text{Comi}, \text{Diff1})/\partial \text{Ecoi} < 0$. The higher the individual's ability, the lower the cost of effort required to get into university, $\partial C_{i1}(\text{Expan}, \text{Ecoi}, \text{Comi}, \text{Diff1})/\partial \text{Comi} < 0$.

If the individual does not accept higher education in China, the total utility is: $U_1 = \log W_0$. If the individual chooses to accept the ordinary university in China, the total utility is: $U_2 = \log W_1 - C_{i1}(\text{Expan}, \text{Ecoi}, \text{Comi}, \text{Diff1})$. If the individual accepts the advanced university in China, the total utility is: $U_3 = \log W_2 - C_{i2}(\text{Expan}, \text{Ecoi}, \text{Comi}, \text{Diff2})$.

4 CONCLUSIONS

It is expected that both higher education opportunities and advanced higher education opportunities are unequal among social classes, i.e. student from higher class families are more likely to attend both ordinary and advanced universities than lower class families.

In terms of the number of higher education opportunities, the inequality of higher education opportunities among classes has been alleviated with the expansion of university enrollment, as the expansion of higher education weakens the influence of family income on the probability of enrollment, and the probability of student of low-income families entering university increases faster than that of high-income families.

On the contrary, since the enrollment expansion of advanced universities is much lower than that of ordinary educational institutions, the role of family income on access to advanced higher education opportunities is relatively enhanced in the expansion process compared to the rapid weakening of the role of family income on student's access to ordinary universities, which eventually brings about further increase in the inequality of advanced higher education opportunities among different classes.

Furthermore, certain details ought to be taken into account for optimized and upgraded processing of messages. In one instance, the university entrance examination acceptance rate has been employed as a proxy variable for higher education expansion, subject to the present limitation and shortage of relevant data availability, given that the acceptance rates of China's 985 project and 211 project universities across the different provinces in previous years were unavailable and unusable.

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