Factors Affecting the Educational Achievement of Chinese College Students

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Abstract. China has achieved tremendous economic success over the past three decades. Meanwhile, privatisation and marketisation policies and corresponding implementations also greatly legitimise educational inequality in higher education, namely College Entrance Examinations (CEE), the extra-score policy and the recommendations system. This article comprehensively investigates the causes behind educational underachievement in China's higher education. This article aims to understand the relationship between social stratification and educational inequality. It surveyed 120 Chinese undergraduate students through an online questionnaire with 15 questions related to the students' basic information. The results show that urban-rural distinction in household registration and annual income, housing conditions, educational expectations and teacher professionalism are the main factors affecting educational achievement and enrolment in universities. The above issues are worthy of consideration in education policymaking, and the widening gap between advantaged and disadvantaged groups of students still exists. In general, middle-class, and urban students benefit the most in their educational experiences.

Keywords: China; higher education; education inequality; social stratification.

1. Introduction

China has experienced tremendous political, economic, and social change since the open-door policy in the late 1970s. A market economy gradually replaced the planned economy. Initially, it was for the efficient allocation of public resources. However, there are more dramatic disparities between urban and rural areas, and among socioeconomic groups across the country. Since then, social inequality was back in the spotlight. The issue of educational inequality also thus draws the wide attention of scholars [1]. They found that its discussion required investigation in terms of social equity and equality [2]. Since 1977, under a relatively stable political and economic environment, policies on access to tertiary education became a focus to inquire about inequality. Three major ones are related to recent higher-educational enrolment: College Entrance Examinations (CEE), the extra-score policy, and the recommendation system.

The CEE system involves a series of national joint examinations for the selection of high school graduates in China. There are several exams for the selected subjects, which are Chinese, mathematics and a foreign language (normally English) are compulsory. Students can choose the science track or the liberal art track for other subjects. Exam results are the determinant of the entrance to higher education at top universities [1]. In the 1990s, China adopted a higher education expansion policy, focusing on decentralization, privatization, and marketization of education. However, the increasing regional disparity has created a socio-economic setting for educational inequality. Coastal areas have far more funding universities than inland areas. Apart from the urban-rural imbalance, this distinction has further widened the differentiation policy on admission. The requirements for enrolment vary from province to province, economically well-developed areas and underdeveloped areas benefited the most. Although the CEE was reformed in 2002, the uneven degree placement distribution maintains inequality.

In addition, the extra-score system also widens education inequality. At first, it was designed to reward students with specialities extra CEE scores and reduce education inequality between the inferior and superior groups. However, it was strongly affected by the students' socioeconomic

backgrounds of their families. Ineligible students may try unfair or illegal ways to gain qualifications. For instance, in proficiency competitions, students from wealthy families dominated places for extra points. Thus, the policy worsens inequality in higher education. It cannot achieve its goal that helping students with difficulties or specialities [1]. Similar problems have appeared in the recommendation system. In high schools, recommended students may get an offer from a university without taking the CEE. The policy aims to take outstanding students by providing a straight channel to access higher education. However, it was abused during the process of implementation. Likewise, well-off family backgrounds and prestigious parental occupations are the passes for recommendations [1].

Although the above policies have remedied the shortcomings, more vigorous criteria may limit their values and strengths. Based on these facts, this article will analyse the reasons behind the institutional settings that influence the educational attainment and enrolment of universities in China. It will adopt the questionnaire method to investigate the relationship between students' socioeconomic backgrounds and their educational achievements. Also, it will try to analyse which factors play a more vital role in creating education underachievement. The research aims to offer a better understanding of the phenomena of inequality in China's higher education and identify knowledge gaps for future reform of higher education.

2. Methodology

This paper investigated the factors influencing the education achievement of Chinese university students through quantitative data from a social survey. The questionnaire chose undergraduate (from years 1 to 4) Chinese students as participants and collected information based on elements related to their socioeconomic statuses and gender backgrounds. These students are mainly 18-25 years old and without foreign immigrant backgrounds. It was made through an online software called 'Questionnaire Star" (Wenjuanxing) and given out in the university social group chats from February 15th to March 15th, 2023. There were 120 answers in total. So, the samples are regarded as random and are effectively acquired.

The questionnaire mainly focused on information on household registration (Hukou) and annual income, to understand their socioeconomic statuses. These two elements are the broad standards for the division of the middle and working classes. Generally, middle-class students with urban household registrations have at least 90,000 yuan as family income. The questions mainly refer to two themes, which are material and cultural resources. According to Tulkin, in the early years of human development, children acquire the fundamental values and norms needed for education achievement through primary socialization from parents [3]. Working-class families were 'culturally deprived' since they fail to socialize their children adequately in many aspects, such as language, self-discipline, and reasoning skills. In addition, material factors in education are even more significant for children's educational performance [4]. Working-class students commonly lack material necessities, such as housing, financial support, or extra curriculum. Grounded on the concept, the analysis will focus on how working-class students are deprived in both aspects and evaluate how their adverse conditions link to their poor education achievements, such as GPA or university backgrounds. 'Project 985' and 'Project 211' are considered top universities in China [5].

3. Result

The survey investigated 120 undergraduate respondents (56 male, 60 female and 4 other genders). 90% of them are 18~25 years old. 66 students are the only child in the family, whereas 54 are not. The dataset involved 13 different aspects of students that correspond to their educational achievement and performance. The analysis will focus on four of them that yield more statistically significant results.

Table 1. Differences in university backgrounds related to household registration/household annual income

X (Household registration/household annual income) \Y (University backgrounds)	Tier 1: 985 universities	Tier 1: 211 universities	Other tier 1 universities	Tier 2 universities	Colleges	Subtotal
Rural household registration/<36,000 yuan	2(20%)	1(10%)	3(30%)	2(20%)	2(20%)	10
Rural household registration/36,000~90,000 yuan	1(5.56%)	3(16.67%)	3(16.67%)	6(33.33%)	5(27.78%)	18
Rural household registration/90,000~250,000 yuan	2(20%)	1(10%)	2(20%)	0(0.00%)	5(50%)	10
Rural household registration/250,000~440,000 yuan	1(33.33%)	0(0.00%)	0(0.00%)	1(33.33%)	1(33.33%)	3
Rural household registration/>440,000 yuan	1(16.67%)	1(16.67%)	3(50%)	0(0.00%)	1(16.67%)	6
Urban household registration/<36,000 yuan	1(14.29%)	2(28.57%)	2(28.57%)	1(14.29%)	1(14.29%)	7
Urban household registration/36,000~90,000 yuan	3(30%)	1(10%)	4(40%)	1(10%)	1(10%)	10
Urban household registration/90,000~250,000 yuan	4(16%)	7(28%)	10(40%)	2(8%)	2(8%)	25
Urban household registration/250,000~440,000 yuan	4(26.67%)	1(6.67%)	8(53.33%)	1(6.67%)	1(6.67%)	15
Urban household registration/>440,000 yuan	2(12.5%)	4(25%)	7(43.75%)	1(6.25%)	2(12.5%)	16

Table 1 shows how household registration and family income are related to the enrolment of different tiers of universities in China. According to Wu, household registration (hukou) and wealth conditions can determine the socioeconomic status of students to a great extent [6]. Respondents who live in rural families with less than 90,000 yuan per year are commonly considered working-class [7]. The overall percentage of urban and rural household students enrol in tier 1 universities are 82.2 % and 51.6%, respectively. It clearly shows that urban students have a greater percentage rate of enrolment in high-level universities. Similarly, rural students have a smaller percentage rate for top universities (Projects 985 & Projects 211). In addition, the percentage of rural working-class students enrol in tier 1, and 985 & 211 universities are 46.4% and 25%, respectively. For rural middle-class students, the two percentages are 57.9% and 31.6%. The percentage of urban working-class students enrol tier 1, and 985 & 211 universities are 76.5% and 41.2%, respectively. Regarding the urban middle class, two corresponding percentages are 83.9% and 39.3%. In summary, middle-class, and urban students tend to have a larger percentage of enrolment in tier 1 universities (including 985 & 211).

Table 2. Differences in university backgrounds related to housing types

X (Housing types)\Y (University backgrounds)	Tier 1: 985 universities	Tier 1: 211 universities	Other tier 1 universities	Tier 2 universities	Colleges	Subtotal
Houses	11(16.67%)	12(18.18%)	27(40.91%)	6(9.09%)	10(15.15%)	66
Detached	1(10%)	5(50%)	3(30%)	1(10%)	0(0.00%)	10
Semi-detached	1(12.5%)	0(0.00%)	3(37.5%)	2(25%)	2(25%)	8
Terrace	0(0.00%)	0(0.00%)	2(40%)	2(40%)	1(20%)	5
Flats	8(36.36%)	2(9.09%)	7(31.82%)	2(9.09%)	3(13.64%)	22
Other types (e.g., rural self-built houses)	0(0.00%)	2(22.22%)	0(0.00%)	2(22.22%)	5(55.56%)	9

Table 2 demonstrates the causal relationship between types of housing and university backgrounds. The questionnaire generally believed that the house quality ranking order is house > detached >semi-detached >terrace >other types (such as rural self-built). Flats are considered a unique type due to the variety of their geographical locations. The percentage of students who own or live in houses enrol into tier 1, and 985 & 211 universities are 75.6% and 34.8%, respectively. The two percentages of detached and semi-detached types are 90%/60% and 50%/12.5%. The percentage of terraces and other types are 40%/0% and 22.22%/22.22%. The percentage of students who live in flats enrol into tier 1, and 985 & 211 universities are 77.3% and 10.5%, respectively. It indicates that students with better house quality tend to have a greater percentage rate of enrolment in high-level universities. Students who lived in flats have a high percentage of tier 1, but a low percentage of 985 & 211 universities.

Table 3. Differences in university backgrounds/GPA related to educational expectations

X (Educational expectations) \Y (University backgrounds)	Tier 1: 985 universities	Tier 1: 211 universities	Other tier 1 universities	Tier 2 universities	Colleges	Subtotal
Bachelor's degree	6(12%)	9(18%)	16(32%)	7(14%)	12(24%)	50
Master's degree	10(19.23%)	8(15.38%)	20(38.46%)	8(15.38%)	6(11.54%)	52
Doctor's degree	5(27.78%)	4(22.22%)	6(33.33%)	0(0.00%)	3(16.67%)	18
X (educational expectations) \Y (GPA)	A (90~100)	B (75~89)	C (60~74)	D (>60)	Subtotal	X (educational expectations) \Y (GPA)
Bachelor's degree	8(16%)	31(62%)	10(20%)	1(2%)	50	Bachelor's degree
Master's degree	8(15.38%)	30(57.69%)	13(25%)	1(1.92%)	52	Master's degree
Doctor's degree	5(27.78%)	12(66.67%)	1(5.56%)	0(0.00%)	18	Doctor's degree

Table 3 shows the influences of educational expectations on university backgrounds and the GPAs of students. 62% of students who expect to achieve bachelor's degrees are from tier 1 (all levels), and 30% are from 985 & 211 universities. 73.1% of students who expect to gain master's degrees are from tier 1, and 34.6% are from 985 & 211 universities. Lastly, 83.3% of students who aim to complete doctor's degrees are from tier 1, and 50% are from 985 & 211 universities. Besides, 16% and 62% of students who expect to achieve bachelor's degrees achieve A and B, respectively. 15.38% and 57.69% of students who aim to finish master's degrees achieve A and B, respectively. 27.78% and 66.67% of students who expect to complete doctor's degrees achieve A and B, respectively. The results indicate that students with higher educational expectations have a higher percentage of enrolment in higher-level universities. Students who aim to complete doctor's degrees have the highest excellence rate (A and B) and the lowest failed rate (D).

Table 4. Differences in GPA related to teacher's support (professionalism and morality)

X (Teacher's support) \Y (GPA)	A (90～100)	B (75~89)	C (60~74)	D (>60)	Subtotal
Yes	20(19.61%)	64(62.75%)	17(16.67%)	1(0.98%)	102
No	1(5.56%)	9(50%)	7(38.89%)	1(5.56%)	18

Table 4 demonstrates how teacher professionalism and morality influence the GPA of their students. The question investigated students' attitudes toward their teacher support. 102 students consider their university tutor reliable, supportive academically, and professional, while 18 are not. 19.61% and 62.75% of students with positive views on their tutors achieve A and B on average, respectively. Only 0.98% of them achieved failed results (D). However, 5.56% and 50% of students with negative views of their tutors achieve A and B averages, respectively. The percentages of those with negative opinions who get C and D are greater than those with positive attitudes toward their tutors. It suggests that more percentage of students who trust their tutor has enough professionalism and academic/mental support achieve better grade-point averages.

4. Discussion

Education inequality and stratification have long existed in China, which has become one of the most active fields of sociological research [6]. Although the government made a lot of efforts to universalize compulsory education and refine its institutional mechanisms, education inequality is still embedded in most education levels. Cheng has concluded three profound dimensions of educational inequality in modern China: urban-rural inequality, regional inequality, and gender inequality [8]. Based on the above quantitative data from the questionnaire on factors influencing education achievement and attainment, the paper has drawn several major conclusions regarding the reasons for inequality in higher education in China.

First, there are significant inequalities in China's higher education between urban and rural areas, middle-class and working-class. Students with urban household hukou and middle-class backgrounds (annual income >90,000) have a natural advantage in their higher educational outcomes (enrolment and attainment). The household registration (*hukou*) system is the most fundamental political institution in Chinese society, which plays a vital role in providing educational services [9]. Cheng argued that urban-rural inequality contributed to a great proportion of overall education inequality in China [8]. It was mainly reflected in gaps in literacy skills, education achievements and enrolment. Teacher quality and school facilities are the main reasons behind this division. In addition, significant distinctions also existed in educational inputs, such as tuition funding and educational resources. Educational finance is a more direct cause of urban-rural inequality [8]. It covered the influences from only unbalanced school financing but also an unequal distribution of household income [6]. Although more private wealth has accumulated on average since marketisation and privatisation reforms, wealth inequality still commonly existed in rural China. The questionnaire result is consistent with

the above findings that substantial urban-rural inequality in all levels of education in China and household income inputs greatly to educational outcomes.

Second, house conditions have a more simple and direct impact on higher education enrolment. According to table 3, poor housing can affect students' higher-educational achievements in China. Students who own or live in good-quality housing types tend to enrol in tier 1 and 985 & 211 universities. Wu argues that household wealth inequality is much more significant than income inequality [6]. House as a valuable public resource plays a vital role in China's social stratification. In earlier stages, the size and quality of allocated housing were greatly on the *danwei* (unit) and individual's occupation [10]. Afterwards, housing management was more commercialised and privatised. Tenants can thus freely resell or purchase allocated houses. It suggests that housing can reflect the social class background and parental occupation of households. House conditions affect educational attainment directly and indirectly [11]. For example, overcrowding and disturbed sleep can be direct effects, while health and welfare based on house quality can be indirect factors.

Third, educational expectations can shape the pursuit of better university backgrounds and higher GPAs. According to the responses of 120 undergraduates, as education anticipations grow, college backgrounds and GPAs are generally better. According to He et al., educational attainment has become progressively significant for young people to pursue better future careers and higher salaries in China [12]. They investigated 3868 senior students in primary schools and noticed that Chinese students' educational expectations increasingly developed in middle childhood. The results show that students with high stable-increasing educational expectations and initial maternal educational expectations tend to achieve better academic achievement (GPA) and better academic backgrounds. These adolescents have the capacity to actively modify their educational expectations in light of their own self-reflective information and parental guidance and promote their educational expectations and aspirations through their previous achievements [13]. Hence, considering the factor of students' expectations is prospective and necessary for practitioners to understand the development of higher-educational attainment and achievement.

Fourth, teacher professionalism and morality play a crucial role in contributing to students' academic outcomes and performance. In this research, students who believe their university tutors are reliable, supportive, and competent tend to achieve good grades (A & B). On the other hand, those who do not believe their tutors get more C & Ds. Zhang and Campbell investigated the issue related to the impact of teacher quality and access to qualified teachers in China [14]. They found that teacher support and character can consistently affect academic achievement across all science subjects in middle schools. The condition widely happened if the analysis did not consider the level of socioeconomic status (SES). In addition, the educational background of teachers, experience and certification are mutually affected by the levels of schools. The conclusions also legitimate the significance of teacher influence on higher education achievements and enrolment.

5. Conclusion

This paper applies the survey data to examine the four main factors that widely influence the educational attainment and enrolment of higher education in China, referring to household registration and annual income, housing, educational expectations and teacher professionalism. It indicates that the distinctions in college students' education achievement are still substantially related to social stratification and societal inequality, such as class differences. Students from advantaged socioeconomic groups are significantly more likely to have more opportunities and better outcomes. In terms of the possible solutions to educational inequality in China, researchers and analysts have encouraged the central government to engage in more active and targeted involvement. Effectively utilising intergovernmental grants and implementing a pro-poor development strategy are considered practical means to promote education equality and equity.

Although the data analysis has drawn several findings on the causes of educational underachievement and provided applicable insights related to current trends of higher-educational

inequality in China, there are several practical or theoretical limitations. First, the theme of social stratification and education inequality has always been active fields of discussion. Thus, the research could not draw constructive and revolutionary conclusions and offer corresponding solutions. It's more of a complement of previous results and an identification of knowledge gaps. Besides, although the study narrowed down the research objects (only undergraduates), the breadth problem of the topic remains intractable, such as involving the issue of differences in Chinese provincial data. Second, the study lacks the methodological diversity and complexity of the design. It only gains quantitative primary sources from the questionnaire with a sample of 120 students. It has no qualitative data and could not notice individual cases. The dataset also lacks SPSS statistical analysis studying more elements, such as correlation or cross-analysis. Hence, the answers could be insufficient for representativeness and validity. Lastly, used concepts could be controversial, and the theoretical framework is not completely elaborated here. For instance, the theoretical conceptualizations about equality, such as equality of educational inputs or outcomes lack basis and standard, which could undermine the strengths of the research.

Crucially, by focusing on what the study reveals and its limitations, it is necessary to consider the complicated interactions of various factors of the current outcomes of China's higher education reform. Nowadays, more and more external forces affect the development of higher education, including the knowledge economy, globalisation, artificial intelligence and even the recent COVID-19 pandemic. Therefore, the inequality reform should start from the current situation of higher education, focusing more on decentralisation, prioritisation, massification, marketisation and internationalisation.

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