

Yuanjie Zhao

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## **Uncover the Myth behind China's Low Tertiary Education Attainment**

### **Abstract**

Ranked as the world's second biggest economy and the largest provider of tertiary education, China has an exceptionally low tertiary education attainment compared to most developed countries. Past studies mainly focus on the impact of the education reforms in China, but little attention is given to its low tertiary education attainment. This study attempts to uncover the myth behind the tertiary education attainment of China by analyzing the data published from the Ministry of Education of the People's Republic of China and the OECD. The result reveals that the low tertiary education attainment in China is a consequence of three dominant factors: 1. the Cultural Revolution in China prevents the majority of people born before the 70s from receiving tertiary education; 2. the admission rates of secondary education and tertiary education were extraordinarily low before the 90s; 3. a large proportion of students could not afford tertiary education before the 90s.

**Keywords:** education, China, tertiary education attainment

### **1. Introduction**

Since its economic reforms in 1978, China has achieved remarkable economic success in the past three decades and has become the fastest growing economy in the world. Along with this rapid economic growth, the demand for high-skilled labor in China has grown substantially, and the government implemented a massive expansion of tertiary education in 1999 in response (Heckman et al.). Two decades after the reform, China today has over 2,600 universities with more than 30 million students and has become the largest provider of tertiary education in the world (Yu et al.). The adult literacy rate jumps from two thirds of the population prior to the reform to 95% today (Taylor et al.). Among all countries in the OECD (Organization for Economic Co-operation and Development), Chinese students account for 20% of all internationally mobile tertiary students, which is more than any other country (OECD).

Despite its great success in the expansion of education system, China's tertiary education attainment among 25-64 year-olds is only 9.7%, significantly lower than most developed countries ("Education At A Glance 2017"). This unexpected low tertiary education attainment is rarely studied and understood by researchers, and this paper aims to uncover the myth behind this unusual number and provide new insights to the state of tertiary education in China. This paper will study the change in China's tertiary education attainment over the past three decades based on data published by the Ministry of Education of the People's Republic of China. It will also compare and contrast the statistics of education attainment between China and other countries. Through a series of examination, this paper will demonstrate that China's low tertiary education attainment is

attributed to three major reasons: 1. the Cultural Revolution in China prevents the majority of people born before the 70s from receiving tertiary education; 2. the admission rates of secondary education and tertiary education were extraordinarily low before the 90s; 3. a large proportion of students could not afford tertiary education before the 90s.

## **2. Background**

### **2.1 Tertiary Education Attainment and Its Significance**

According to the World Bank, tertiary education, also known as higher education, refers to all kinds of post-secondary education, including universities, colleges, technical training institutes, and vocational schools. Tertiary education is fundamental in fostering growth, reducing poverty and boosting prosperity. A highly-skilled workforce, with a solid post-secondary education, is a prerequisite for innovation and growth: well- educated people are more employable, earn higher wages, and cope with economic shocks better.

Tertiary education benefits not just the individual, but society as well. Graduates of tertiary education are more environmentally conscious, have healthier habits, and have a higher level of civic participation. In short, tertiary education institutions prepare individuals not only by providing them with adequate and relevant job skills, but also by preparing them to be active members of their communities and societies. Higher tertiary education attainment can attenuate skills shortages in knowledge-intensive economic sectors and promotes productivity growth, innovation and competitiveness.

## 2.2 Major Events in the Chinese Higher Education System

The civil war victory of the Chinese Communists Party (CCP) over the Kuomintang and the founding of the People's Republic of China (PRC) in 1949 marked a turning point for the nation as well as for its higher education system. Higher education institutions were designed to strictly follow the state's unified plans and, in effect, students represented goods in the centrally planned economy (Brown 2). The leaders of higher education institutions were governmental bureaucrats appointed by the relevant authority and assigned bureaucratic rank. Every process, from admissions to curriculum development, instruction to student job allocation, was uniform and centralized. Faculty pay scales were fixed, jobs within specific industries were directly assigned to graduates, and higher education was free for all students.

The newly-established People's Republic of China also introduced the *Gaokao* system (also known as National College Entrance Examinations). Students across the country took a two-day college entrance examination, and their overall scores on this standardized test determined their acceptance to universities.

However, in 1966, Mao Zedong, then Chairman of the Communist Party of China, initiated the "Cultural Revolution", attempting to eradicate all remnants of capitalism and traditional culture and to reassert his authority over the Chinese government (Naughton 10). As a result of this social movement, the economy was severely disrupted and the higher

education system devastated. The existing higher education system was nearly wiped out. Many universities and colleges were closed down and others were forced to a standstill. Nation-wide, the enrollment of undergraduate students had been suspended for years. The *Gaokao* was not restored until 1977, one year after the cultural revolution had stopped.

In 1978, to accelerate modernization, the Chinese government launched the “Reform and Open-door” by permitting the advent of market-based economy. Since then, China has experienced unprecedented growth with the GDP (Gross Domestic Product) increasing by an average of 9% each year. The great success in the economy of China also imposes significant challenges on its education system and labor market. In 1999, two decades after the economic reform, only 3.8% of the labor force in China had tertiary education (Bai 2). Realizing this acute shortfall in high-skilled labor, the Chinese government undertook major restructuring of China’s tertiary education systems in order to fill in the gap in labor market. In 1999, the government massively increased university enrollment with the goal of increasing the percentage that participate in higher education from 9 to 15% in 2010 (Heckman 5). Due to unprecedented growth rates, this goal was achieved in 2002, eight years ahead of schedule. During this dramatic education reform, China has experienced a shift from “elite” to “mass” higher education, and the opportunities for people to participate in higher education have expanded considerably. Today, with over 2,600 universities and more than 30 million students (Brown 9), China is the world’s largest provider of higher education.

### **3. Method**

This paper studies the change in tertiary education attainment of China over the past three decades based on data published by two major sources: the Ministry of Education of the People's Republic of China, and the education report from the OECD, an intergovernmental economic organization with 35 member countries and mostly developed countries. Comparative analysis is performed on the statistics of education attainment between China and other countries to gain insights into the education of China.

#### 4. Results and Analysis

Table 1: List of OECD countries by tertiary education attainment in 2014

Country	Age 25-64 (%)	Age			
		25-34 (%)	35-44 (%)	45-54 (%)	55-64(%)
Australia	42	48	46	38	33
Canada	54	58	61	51	45
China	10	18	9	6	4
Denmark	36	42	41	33	29
Finland	42	40	50	44	34
France	32	44	39	26	20
Germany	27	28	29	26	25
Italy	17	24	19	13	12
Japan	48	59	53	47	35
United Kingdom	42	49	46	38	35
United States	44	46	47	43	41

Table 1 presents part of the OECD education statistics, which illustrates that the tertiary education attainment of China ranks the lowest among all OECD countries. However, if we focus on the tertiary education attainment at different age groups, a striking trend appears. The percentage of the population with tertiary education is 18% in age group 25-34, 9% in age group 35-44, and 4% in age group 55-64 (Brown 12). On average, the percentage of the population with tertiary education doubles with each generation in China, and no other country experiences such an explosive growth rate. Consequently, to explain the low tertiary education attainment in China, we need to address the question “why is

China's tertiary education attainment unusually low in age group above 35". The answer to this question involves historic aspect and economic aspect.

A historic event that significantly impacts the higher education attainment is Cultural Revolution. During this period, class suspension was nationwide and few universities continued enrolling students. Gaokao was suspended in 1966 and was not restored until 1977. Therefore, the majority of Chinese born before the 70s do not have the opportunities to receive higher education.

However, even after the restoration of Gaokao and university enrollment, the admission rates of secondary education and tertiary education remains extremely low until early 90s. During the period from the late 70s to early 90s, the admission rate of tertiary education was less than 30% each year (Lixu 5). In most rural areas, the admission rates of secondary education and tertiary education were estimated to be less than 10% (Zhang 4). In contrast, the admission rate of secondary education in 2016 is close to 100% due to the practice of the nine-year compulsory education since 1986; and the current admission rate of tertiary education is above 70% due to the rapid increase in the number of tertiary education institutions since the rapid expansion of universities in 1999 (Tsang 2).

Another dominant factor contributing to the low higher education attainment before the 1990s was the adverse economic condition in average Chinese households. It was estimated that more than one thirds of the population lived near poverty line (OECD). Most people would have to start working immediately after elementary or junior high school in



order to support themselves and their families. Also, during that period, there was little incentive to pursue a degree since the salary two years after graduation was almost equivalent to those without any university education. Consequently, taking higher education was more like a luxury at that time.

As a result of these historic and economics factors, China's tertiary education attainment is strikingly low in age group above 35, which also explains why China's overall tertiary education attainment is lower than most developed countries in the world.

## **5. Conclusion**

The examination above demonstrates that the low tertiary education attainment in China is attributed to three major reasons: 1. higher education was not available during the period of Cultural Revolution; 2. the admission rates of secondary education and tertiary education were extraordinarily low before the 90s; 3. a large proportion of students could not afford tertiary education before the 90s.

## **6. Limitation and Future Study**

Although the education reform in the late 90s has improved the general educational quality in China, it also creates new issues of equity and efficiency that need to be addressed in the new century. The rapid expansion of mass higher education has resulted in

not only a strain in teaching resources but also in higher unemployment rates among graduates. Although there is a larger pool of graduates of higher education, many still don't have the relevant skills needed for a successful integration into the labor market. Moreover, the restructuring of higher education has created a clearly escalating social stratification pattern among higher education institutions, stratified by geography, source of funding, and administrative unit. People from disadvantaged backgrounds remain underrepresented in tertiary education and have higher university dropout rates. Future study should focus on how to prevent inequality from being repeated in each successive generation and how to ensure that students from all socioeconomic or geographical backgrounds have equal access to higher education.

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