Research on the Intergenerational Transmission of Human Capital Based on Education Level of Ethnic Minorities

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Abstract. The structural imbalance of human capital accumulation will create a series of social equity problems, which will hinder the progress and development of society. At the same time, in the multi-ethnic society, the accumulation of human capital in ethnic areas is not balanced, and its intergenerational transmission will form its own characteristics. Qinghai Tibetan Area is an important part of Tibetan areas in China. This paper takes Tibetan people in Qinghai Province as the research object, by measuring the human capital stock and intergenerational transmission efficiency of Tibetans in Qinghai Province, it is important to improve the human capital stock and promoting social equity in Qinghai Tibetan areas.

Introduction

Human capital is the original driving force of economic growth and social development. Education, as the basic element of human capital, plays an important role in the development of human capital. Education can not only increase the accumulation and level of human capital of the educated, but also affect the accumulation and level of human capital of their children through intergenerational transfer [1]. This is the intergenerational transmission effect of human capital. On October 18, 2017, in the 19th National Congress of the Party, President Xi clearly stated in his report that “continuous promotion of social fairness and justice” should be an important development goal, and the core of it is “prioritizing the development of education”, improve the level of social civilization and form effective social governance and a good social order.

Education is the main way to improve the stock of human capital. The improvement of human capital stock in ethnic minority areas will also need to be realized through the development of education. On the one hand, it is necessary to learn Chinese to successfully enter the modern society of mainstream culture, on the other hand, learning the language of the nation helps to inherit the excellent traditional culture of ethnic minorities [2].Therefore, bilingual education is an important part of national work and an important part of national basic education [3]. It is an inevitable choice for developing national culture and language in modern society and realizing national unity and equality.

Capital is not always tangible and material, and it can be fully reflected in the labor, thus forming “human capital” and increasing the capital stock of a specific country (Shultz, 1960). From the micro perspective, human capital refers to the “comprehensive characteristics of knowledge, ability and health level that are condensed on human resources through investment in human activities such as education, on-the-job training, medical care, migration and information collection”. (G. S. Becker, 1963) .OECD (2006) defines human capital as the knowledge, skills, capabilities and various characteristics possessed by individuals that are closely related to economic activities.

Intergenerational transmission refers to the transfer of one generation's resource endowment to the next generation, which includes the previous generation's ability, behavior, concept and other characteristics. International theoretical research on intergenerational transfer of human capital can be traced back to the 1860s, but there is no unified definition of intergenerational transfer of human capital in the academic world. Based on the definition of intergenerational transmission, intergenerational transmission of human capital can be defined as the transmission of human capital elements such as education and health from parents to children [4]. On the macro level, it can be
described as the impact of the human capital stock of the previous generation of a country or nation on the human capital accumulation of the next generation. On the micro level, it is the impact of the human capital accumulation of parents on the transmission of human capital by their children under the background of a family (Solon, 1999).

The intergenerational transmission of human capital occurs between two generations, usually based on the family. It does not only refer to the resource endowment of parents' knowledge, skills and health to the children's generation. In the long run, it will affect the way and speed of the accumulation of human capital of the whole country or nation, as well as the employability and income level of the society, which will have an impact on economic growth efficiency and social equity. Therefore, to some extent, the intergenerational transfer mechanism of human capital is also one of the criteria for measuring the efficiency of social economic growth and social equity.

Methodology and Data

Sample Description

In this paper, "generation" refers to the group of similar age in the same period, influenced by the same social environment. In order to distinguish the difference between "generation" and "generation", intergenerational interval is often used to express the existence of a "generation", that is, the time span between "generation" and "generation", also known as "generation length" or "generation circumference". The gap between generations is usually 20 years [4].

If 20 years is an intergenerational interval, only four generations of intergenerational relationships can be formed, and it is difficult to obtain human capital stock data corresponding to the time points. Therefore, based on the four national census times since 1982, this paper expands the intergenerational relationship and constructs two intergenerational relationships. As shown below:

![Fig 1. Schematic diagram of intergenerational relationship](image)

Model Specification

There are many ways to measure human capital stock: cost-based, income-based, and education-based years. Education, as an important way for people to obtain human capital, is also the main form of investment in human capital. Therefore, many scholars use the method of education years to evaluate the stock of human capital. At the same time, in order to remove the influence of the population of the region, this paper uses the average years of education to calculate the human capital stock of Tibetans in Qinghai Province. The calculation formula is as follows.

\[
MED = \frac{\sum_{i=1}^{n} X_i P_i}{\sum_{i=1}^{n} P_i}
\]

(1)

MED indicates the average years of education, \(i\) represents the level of education from 1 to \(n\), \(X_i\) represents the number of years of education at level \(i\), \(P_i\) represents the number of people with level \(i\) education. \(\sum_{i=1}^{n} P_i\) represents the number of people aged 6 and over in the area.

In order to better study the intergenerational transmission effect of human capital, Dr. Hu weihua (2014) from shaanxi normal university introduced the concept of intergenerational transfer
value-added rate of human capital. Generally speaking, the human capital stock of the next generation is usually higher than that of the previous generation. The difference of human capital stock between two generations is the intergenerational increment of human capital. Its relative number is the intergenerational transfer of human capital value-added rate.

\[
P_t = \frac{E_t - E_{t-1}}{E_{t-1}} \times 100\% \quad (2)
\]

\( P_t \) represents the intergenerational transfer value-added rate of human capital in generation \( t \), \( E_t \) is the human capital stock of generation \( t \), \( E_{t-1} \) is the human capital stock of generation \( t-1 \), where \( t-1 \) is the previous generation of \( t \).

The change of the value of intergenerational transfer value-added rate of human capital can reflect the degree of intergenerational transfer and intergenerational flow of human capital. [6] When \( P_t < 0 \), the stock of human capital of the next generation is smaller than that of the previous generation, indicating that the social development is backward and the educational cause is stagnant or even regressive; Normally, \( P_t \geq 0 \), when the smaller, almost close to 0, the weaker intergenerational mobility of human capital, and the stronger intergenerational transmission, resulting in social inequality; When \( P_t \) is larger, it means that the intergenerational mobility of human capital is stronger. On the contrary, the intergenerational transmission is weaker. The next generation relies more on their own efforts to obtain development opportunities and obtain social capital.

**Data Processing**

In order to calculate the human capital stock of Tibetans in Qinghai Province, the following data processing is carried out: Select population data of 6 years old or older; The education level is divided into illiterate (including literacy classes), elementary school, junior high school, high school (including secondary school), specialties, undergraduate and postgraduate students. The education years of each education level are set as: 0, 6, 9, 12, 15, 16 and 20 years.

**Results and Discussion**

**Calculation Results**

According to Formula (1), the human capital stock of the Tibetan people in Qinghai province and the whole country can be calculated.

| Year | Qinghai Tibetants [Year] | Nation [Year] |
|------|-------------------------|---------------|
| 1982 | 1.47                    | 4.52          |
| 1990 | 2.28                    | 6.25          |
| 2000 | 3.50                    | 7.60          |
| 2010 | 5.52                    | 8.76          |

In 2010, the average education period of Tibetans in Qinghai Province was only 5.52 years, which was far lower than the requirement of nine years of compulsory education in the country. This fully shows that although the development of Tibetan education in Qinghai Province is relatively fast, it is still relatively backward.

According to Formula (2) and Table 1, the intergenerational transfer value-added rates of human capital in Qinghai province and the whole country are calculated as follows:
Table 2. The intergenerational transfer value-added rates of human capital

|                  | Qinghai Tibetans [%] | Nation [%] |
|------------------|----------------------|------------|
| $P_1$            | 138.10               | 68.14      |
| $P_2$            | 142.11               | 40.16      |

It can be seen from $P_1$ that the intergenerational transfer value-added rate of human capital of the Tibetan people in Qinghai is very high, which is 138.10%, indicating that from 1982 to 2000, the human capital stock of the Tibetan people in Qinghai Province had almost increased by 1.5 times, the national figure was only 68.14%. From 1990 to 2010, the intergenerational transfer value-added rates of the Tibetan people in Qinghai Province was still very high. Different from the decline of the national data, the appreciation rate of human capital stock of the Tibetan people in Qinghai Province increased from 138.10% to 142.11%, more than three times that of the whole country.

Data Analysis

From the perspective of human capital stocks, the education development in Tibetan areas of Qinghai Province had lagged behind. Analysis of the structure of the human capital stock may reveal some reasons. From figure 2, we can clearly see the structure of the human capital stock of the Tibetan people in Qinghai Province in 1990, 2000 and 2010. In 1990 and 2000, the structure was roughly the same, with illiteracy accounting for the highest proportion, followed by primary and middle schools. The higher the level of education, the smaller the proportion of population. In 2010, the proportion of the population of primary school surpassed illiteracy for the first time, accounting for 49.43%, almost half of the total population. Meanwhile, the proportion of illiteracy dropped significantly, from 69.81% in 1990 to 54.3% in 2000, and dropped to 27.64% in 2010. Compared with 1990 and 2000, in 2010, except illiteracy, the proportion of all other levels of education increased, especially the rapid development of primary education, which made an outstanding contribution to improving the human capital stock of the Tibetan people in Qinghai Province.

Table 3. The proportion of tibetan education level in qinghai province

|                                | 1990    | 2000    | 2010    |
|--------------------------------|---------|---------|---------|
| Illiterate (including literacy classes) | 69.81   | 54.30   | 27.64   |
| Elementary School              | 20.45   | 29.65   | 49.43   |
| Junior High School             | 6.29    | 9.02    | 12.73   |
| High School (including secondary school) | 2.84    | 5.17    | 4.87    |
| Specialties                    | 0.35    | 1.30    | 3.32    |
| Undergraduate                  | 0.26    | 0.55    | 1.93    |
| Postgraduate Students          | ---     | 0.02    | 0.09    |

With the increase of human capital stock, the intergenerational transfer value-added rates in Qinghai Province had slightly increased. In general, with the improvement of human capital stock, the intergenerational transfer value-added rates will gradually decline, and the national data showed this trend. Here, although the intergenerational transfer value-added rate in Qinghai Province is very high, it had exceeded 100%, but its human capital stock was still at a low level. It can also be seen from Table 1 that the average age of education for Tibetans in Qinghai Province in 2010 was only 5.52 years, which had not yet reached the level of primary school, and the gap with the national human capital stock was 58.70%. The education years of Tibetans in Qinghai Province were far below the national average. In the future, as the stock of Tibetan human capital in Qinghai Province increases, the intergenerational transfer value-added rate will gradually decline.

From 1982 to 2000, the intergenerational transfer value-added rate of Tibetans in Qinghai Province was 138.10%, and the national average level in the same period was 68.14%. From 1990 to 2010, the intergenerational transmission rate of Tibetan human capital in Qinghai Province was 142.11%, and the national average in the same period. 40.16%, the intergenerational transfer value-added rate of Tibetans in Qinghai Province had always been higher than the national average,
and the gap in their human capital stocks was decreasing.

Through the above analysis, it can be found that the intergenerational transfer value-added rate of human capital of the Tibetan people in Qinghai Province remains high, mainly due to the low stock of human capital, which has an adverse impact on the long-term development of human capital of the Tibetan people. Therefore, it is necessary to increase the basic investment in education in Tibetan areas in Qinghai Province and increase its human capital stock, this is also in line with the viewpoint of "human capital investment, especially for vulnerable groups, is conducive to the establishment of social equity mechanism" (Becker, 1964).

Summary

Human capital is the original motive force of economic growth and social development. Education, as the basic element of human capital, plays an important role in the development of human capital. As one of the important ethnic minorities in Northwest China, Tibetans have their own language and writing, and the education system is relatively perfect. Qinghai Tibetan area is an important part of China's Tibetan areas, and its human capital stock and intergenerational transfer value-added rate have its own characteristics. By analyzing the development changes, it is of great significance to improve the human capital stock in Qinghai Tibetan areas, promote social equity and realize the common development of all ethnic groups.

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