

Analysis and countermeasures on paradox of “poverty caused by education” under the background of rural revitalization

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ABSTRACT. *The sample data are used from Shaanxi Statistical Yearbook (1999-2018) and poverty population in X County of Southern Shaanxi in 2018. By using Eviews and Excel, this report focuses on analyzing the relationship between education investment and economic growth, education for poverty population, per capita income and poverty caused by education in X county, which can explain reasons for the phenomenon of poverty caused by education. The countermeasures are proposed to solve the phenomenon of poverty caused by education, including establishing scientific education view, correctly understanding education investment and benefit, and improving the aid mechanism for poor students to realize the effective connect among poverty alleviation through education, accurate poverty alleviation and rural revitalization.*

KEYWORDS: *rural revitalization; poverty caused by education; economic development*

1. Introduction

According to China Statistical Yearbook 2018, China's agricultural population in 2017 was 57.661 (10,000), accounting for 41.48% of the total population^①. Therefore, the problem of agricultural and rural peasants is a fundamental issue related to China's economic development and people's lives. The Central Committee Document No. 1 in 2018 put forward the overall views on the implementation of the strategy of rural revitalization. The central document No.1 in 2019 has point out that the implementation of the strategy of rural revitalization is

^① China Statistical Yearbook—2018 <http://www.stats.gov.cn/tjsj/ndsj/2018/indexch.htm>

the general master of the work of “agriculture, countryside and farmers”. The State Council Government Work Report in 2019 emphasizes that we should strengthen the integration of poverty alleviation and rural revitalization to ensure that the goal of poverty alleviation and poverty alleviation can be achieved as scheduled by 2020. The report of the Nineteenth National Congress pointed out that the contradiction between people’s growing need for a better life and unbalanced and inadequate development is the main contradiction at the present stage in China. Especially under the dual structure, the imbalance of human capital development in rural areas needs to be solved urgently. As the core element of human capital, education is an important way to develop human capital. In his book *Investing in People* (2017), Theodore Schultz argues that human capital is valuable and acquired; education and training are the main investment factors of population quality that have increased through appropriate investment. Such investments aim at improving the quality of the population, which can greatly contribute to economic prosperity and increase the welfare of the poor. The improvement of population quality is largely due to more education. The more investment in education is, the higher the efficiency of labor production is. At present, there is also a discussion of “poverty caused by education” in current society like education investment for a long time, high costs and low benefits, especially increasing the economic burden of poor families and the difficulty of poverty alleviation. Is the paradox of “poverty caused by education” valid? If so, how to crack it? If not, how to explain this phenomenon? The emphasis of rural rejuvenation is the rejuvenation of talents, and education is the basis of the rejuvenation of talents. In this report, the paradox of “poverty caused by education” is analyzed through empirical research, which is of great significance to the implementation of the strategy of rural revitalization.

2. Literature review

The domestic and foreign studies have differences in the relationship between education and poverty. In foreign countries, the related study mainly focuses on the problem of “poverty alleviation through education”, but seldom the problem of “poverty caused by education”. Domestic issues have broadly involved “poverty alleviation through education” and “poverty caused by education”.

On the issue of “poverty caused by education”, scholars mainly start from four aspects: the connotation of poverty caused by education, the impact of poverty caused by education, the causes of poverty caused by education, and the countermeasures of poverty caused by education. However, there are some differences in research perspectives: (1) in the regional perspective, the causes, mechanism and coping strategies of the phenomenon of “poverty caused by education” in China are analyzed from the whole and minority areas (southern Guizhou, Enshi, Yanbian); (2) from economic perspective, phenomenon of poverty caused by education is analyzed in low-income families from the perspective of education investment income, phenomenon of poverty caused by education is discussed from education cost, education fee and family education investment, “Economic Budget Line” is introduced to analyze the “poverty caused by education”

mechanism of unit families;(3)from other perspectives, the vulnerability factors leading to “poverty caused by education” is analyzed from the perspective of vulnerability theory, and corresponding policy recommendations are put forward, the predicament and countermeasure of “poverty caused by education” from the perspective of values , the relationship between educational spillover effect and educational poverty is analyzed from the perspective of externality , the “poverty caused by education” is analyzed from the sociological perspective. To sum up, although existing studies have analyzed the problem of “poverty caused by education” from different perspectives, most of them remain in the phase of phenomenal description. Essential issues are seldom discussed and empirical analysis is involved, but there is no study on the poor population in the whole county at present.

Based on the existing research results and the theory of human capital, Eviews software is employed to analyze the relation between education investment and rural residents income through the data of rural residents’ per capita net income, cultural, educational and entertainment expenditure, transportation and communication expenditure, medical and health expenditure in *the statistical yearbook of Shaanxi Province* from 1999 to 2018. This report uses the sample data of poverty-stricken population in X County of southern Shaanxi province in 2018. Excel software is employed to analyze the basic situation of 42308 poverty population in this county. The empirical analysis is done according to education level, per capita income and the proportion of poverty caused by education.

3. Empirical analysis

3.1 Data sources

The sample interval is selected from 1999 to 2018. The data come from *Shaanxi Statistical Yearbook* in the past ten years. The per capita net income of rural residents, expenditure on culture, education and entertainment, expenditure on transportation and communication, and expenditure on health care reflect farmers’ income (Y), education investment (X1), migration investment (X2) and health investment (X3), respectively. In order to eliminate the impact of inflation, GDP deflator is used to process the data. The GDP deflation index is used to eliminate the inflationary effects of per capita net income, education investment, health investment and migration investment of Chinese farmers from 1999 to 2018. Eviews 9.0 was used as analysis tool to carry out unit root, co-integration test and regression analysis.

3.2 Empirical test

(1)Unit root test

Unit root test mainly tests the stationarity of selected data to ensure the validity of the model. The logarithm is selected for per capita net income Y and education investment X1, health investment X2 and migration investment X3. The time series

of lNY, lNX1, lNX2 and lNX3 are tested by the unit root (ADF) test method, which is shown in Table 1.

Table 1. Unit root test

Variable	(C, T, K)	T statistic	P value	D-W value	conclusion
DDLNY	(C,T,1)	-7.960162	0.0001	1.935030	II(2)
DDLNX1	(no,no,1)	-4.330785	0.0003	2.040793	II(2)
DDLNX2	(no,no,1)	-5.310570	0.0000	2.054945	II(2)
DDLNX3	(no,no,1)	-3.665762	0.0012	1.974443	II(2)

Note: D represents first-order difference of variables; in (C, T, K), C represents intercept term, T represents time trend term, K represents lag order.

In Table 1, all variables are second-order difference II(2) stationary time series by unit root test. All four variables are second-order single-integer variables, which satisfy the condition of cointegration test.

(2) Cointegration test

The results of cointegration test are shown in Table 2.

Table 2. Cointegration test

Test method	Johansen Cointegration test	
	Trace Statistic	λ -max(Max-Eigen Statistic)
	49.65568	27.38743
5%(0.05Critical Value)	40.17493	24.15921

In table 2, Trace Statistic value is 49.65568 and λ -max of Max-Eigen Statistic value is 27.38743, which is over 5% significance level threshold respectively (0.05Critical Value)40.17493 and 24.15921. Therefore, dependent variable lNY and independent variable lNX1, lNX2, lNX3 has the cointegration relationship. There is a long-term stable relationship between farmers' income and investment in education, health and migration.

3.3 Regression analysis and conclusion

Through ADF test, it is found that the original time series of each variable is not stationary and only after the second-order difference can it show stationarity. Variables are second-order monolithic sequences, on which a regression model can be established for analysis. The theoretical form of the model can be estimated as: $lNY = \alpha + \beta_1 lNX1 + \beta_2 lNX2 + \beta_3 lNX3$

In the above formula, α —intercept constant, $\beta_1, \beta_2, \beta_3$ —regression coefficient

OLS is employed for regression analysis to lNY and lNX1, lNX2, lNX3, and the estimated results of the regression model are shown in Table 3.

Table 3. Regression analysis

	Estimated value	T statistic	P value
α	2.176	11.52	0.0000
β_1	0.498	6.23	0.0213
β_2	0.289	2.64	0.0101
β_3	0.093	1.53	0.0006

From the estimation results of the model, it can be seen that the parameters in the model have passed the saliency test at the 5% saliency level, so the parameters in the model are significant.

In addition, the goodness of fit $R^2 = 0.9897$ can also be calculated, which shows that the overall interpretation of the equation is higher, and thus the expression of the equation can be written as follows:

$$\ln Y = 2.176 + 0.498 \ln X_1 + 0.289 \ln X_2 + 0.093 \ln X_3$$

(11.52)(6.23)(2.64)(1.53)

$R^2 = 0.9897$ DW = 2.039 (Numbers in parentheses represent t-statistics corresponding to parameter estimates)

From the above analysis, it can be seen that in the sample interval of 1999-2018, there is a long-term equilibrium relationship between farmers' income and their investment in education, migration and health in Shaanxi Province. In the long run, these three kinds of investment are positively correlated with farmers' income, which proves the theory of human capital investment. Among them, contribution rate of education investment gets the highest, while health and migration investment is less.

4. Suggestion

In order to strengthen the integration of poverty alleviation and rural revitalization and the effective implementation of the strategy of rural revitalization, the following suggestions are proposed to provide reference for policy makers:

First of all, the uneven distribution of educational resources is the external cause of "poverty caused by education". It is necessary to optimize the allocation of educational resources from the aspects of balanced allocation of urban and rural educational resources, raise the subsidy standard of non-compulsory education funds, and emphasize the development of vocational education.

Secondly, the backward concept of education is the internal cause of "poverty caused by education". It should be establish the scientific education concept from a comprehensive understanding of the educational function, to change the values of "leaving the farmer" and "attaching importance to general education rather than vocational education".

Thirdly, the deviation of education expenditure-income is the economic cause of

“poverty caused by education”. It is very important to correct understand education investment and income including correct understanding of the long-term nature of education investment process, the externality and incremental nature of education investment income, and rational selection of education investment forms.

At last, lack of support mechanism for poor students is the institutional reason for “poverty caused by education”. To improve the support mechanism for poor students, we should improve the system of grants and loans for rural students, improve the employment support system, and build an entrepreneurship support platform.

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